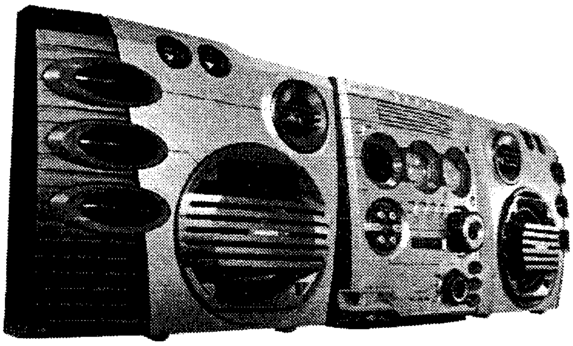
Mini System **FWM589/21/22/30**

Service
Service
Service



Service Manual

COMPACT disc DIGITAL AUDIO
COMPACT disc DIGITAL AUDIO Recordable
COMPACT disc DIGITAL AUDIO ReWritable
MP3-CD PLAYBACK MP3

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**CLASS 1
LASER PRODUCT**

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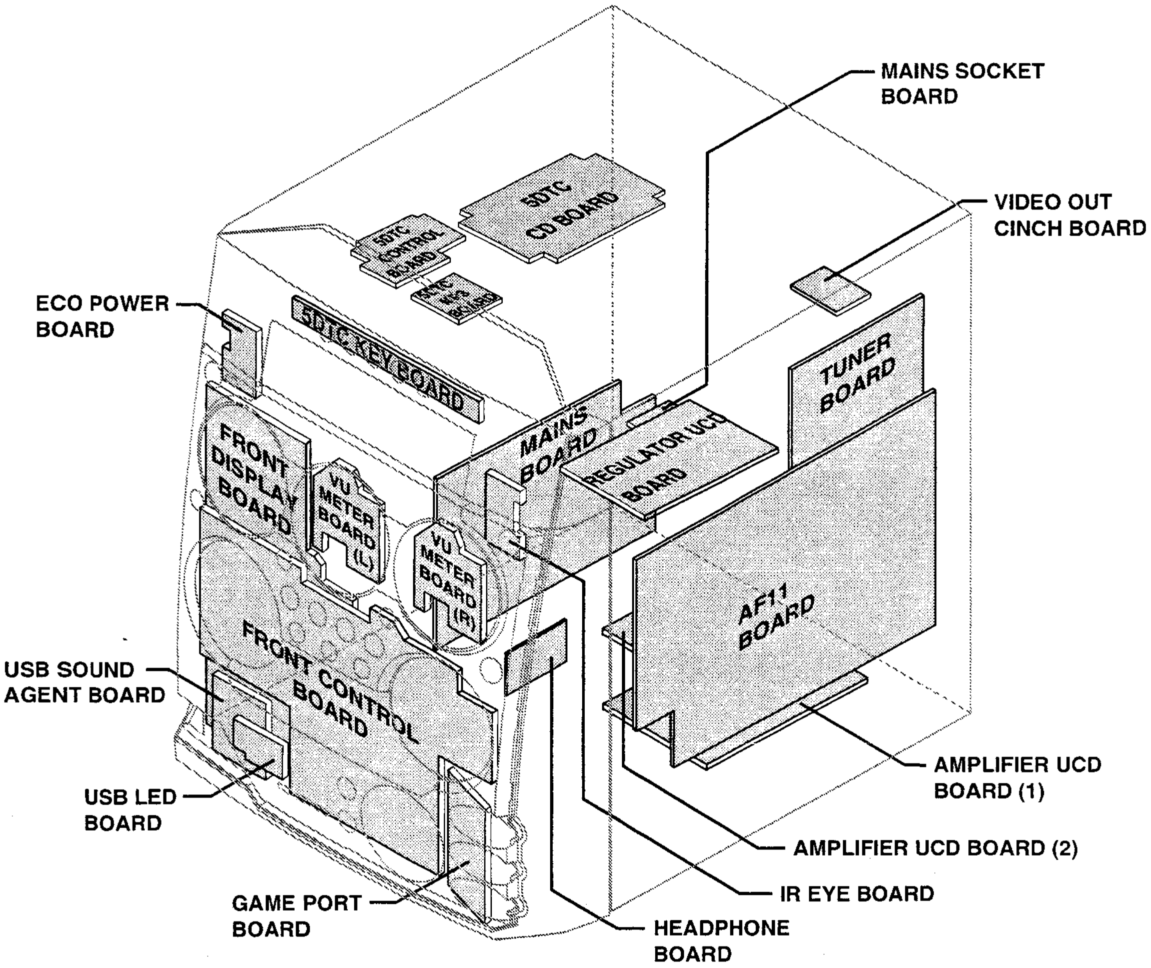
Version 1.1

PHILIPS

.OCATION OF PRINTED CIRCUIT BOARDS


MAINS SOCKET BOARD
VIDEO OUT CINCH BOARD
5DTC CD BOARD
5DTC CONTROL BOARD
5DTC KEY BOARD
ECO POWER BOARD
TUNER BOARD
MAINS BOARD
REGULATOR UCD BOARD
FRONT DISPLAY BOARD
VU METER BOARD (L)
VU METER BOARD (R)
AF11 BOARD
FRONT CONTROL BOARD
USB SOUND AGENT BOARD
AMPLIFIER UCD BOARD (1)
USB LED BOARD
AMPLIFIER UCD BOARD (2)
IR EYE BOARD
GAME PORT BOARD
HEADPHONE BOARD

VERSION VARIATIONS:

Type /Versions:	FW-M589									
Features & Board in used:	/21	/22	/30							
Aux in / CDR in	x	x	x							
Line Out										
Video Out	x	x	x							
Surround Out										
Subwoofer Out										
Power Booster Out										
Digital Out										
Digital in										
Matrix Surround										
RDS		x								
Dolby Pro Logic (DPL)										
Incredible Surround										
Karaoke Features										
Voltage Selector	x									
ECO Power Standby (Clock Display Off)	x	x	x							
ECO6 Tuner Board - Systems Non-Cenelec	x		x							
ECO6 Tuner Board - Systems Cenelec		x								
USB PC LINK	x	x	x							
Game Port (Video / Audio L / Audio R)	x	x	x							

SPECIFICATIONS

GENERAL:

Mains voltage : 110-127V/220-240V Switchable for /21/21M
: 230 ± 10% for /22/30
: 120 ± 10% for /37
Mains frequency : 50/60Hz
Power consumption : < 1W at ECO Power Standby
: < 25W at Standby (DEMO mode off)
: 175W at Active
Clock accuracy : < 4 seconds per day
Dimension centre unit : 265 x 322 x 390mm

TUNER:

FM

Tuning range : 87.5-108MHz
Grid : 50kHz
100kHz for /37
IF frequency : 10.7MHz ± 25kHz
Aerial input : 75 Ω coaxial
300 Ω click fit for /37
Sensitivity at 26dB S/N : < 7µV
Selectivity at 600kHz bandwidth : > 25dB
Image rejection : > 25dB [> 75dB]
Distortion at RF=1mV, dev. 75kHz : < 3%
-3dB Limiting point : < 8µV
Crosstalk at RF=1mV, dev. 40kHz : > 18dB

MW

Tuning range : 531-1602kHz
530-1700kHz for /21/21M/37
Grid : 9kHz
10kHz for /21/21M/37
IF frequency : 450kHz ± 1kHz
Aerial input : Frame aerial 18.1µH
Sensitivity at 26dB S/N : < 4.4mV/M
Sensitivity at S9/300KHz : > 18dB
IF rejection : > 45dB
Image rejection : > 28dB
Distortion at RF=50mV, M=80% : < 5%

AMPLIFIER:

Output power (6 Ω, 1kHz, 10% THD)
L & R : 2 x 200W RMS /21/22/30
: 2 x 160W FTC /37
Frequency response within -3dB : 63Hz-16kHz
MAX Sound : On / Off
Game Sound : Speed /Punch /Blast /Off
Dynamic Bass Boost (DBB) : DBB 1, 2, 3 & Off
Digital Sound Control (DSC) : Jazz /Rock /Pop /Optimal
Virtual Ambience Control (VAC) : Cyber / Arcade / Hall / Cinema / Concert

Input sensitivity
Aux in (at 1kHz) : 640mV ± 2dB
Game Port (at 1kHz) : 310mV ± 2dB
USB (at 1kHz) : 830mV at 600 Ω

Output sensitivity
Headphone output at 32 Ω : 700mV ± 2dB (Max. vol.)

5DTC:

Measurement done directly at the connector on the board.

Output Resistance : < 100 Ω
Output Voltage (0dB, 1kHz) : 0.5Vrms ± 1dB (unloaded)
Channel Unbalance : < ±1dB
Channel Separation (1kHz) : > 60dB
Frequency Response (±3dB) : 20Hz-20kHz
Signal to Noise Ratio : > 75dBA
MP3-CD Bit Rate : 32-256 kbps
Sampling Frequencies : 32, 44.1, 48 kHz

USB:

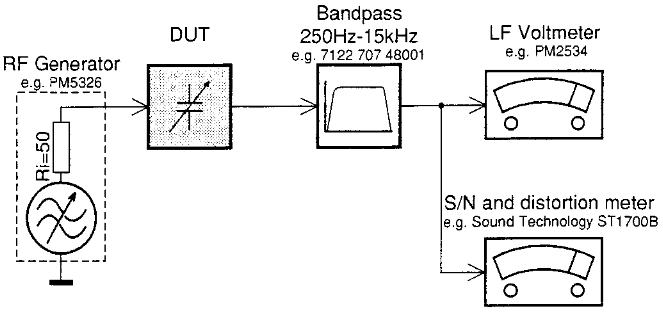
Measurement done directly at the connector on the board.

Output Impedance (1 kHz) : < 1.5 kohm
Output Voltage (0dB, 1kHz) : 830mVrms ± 1.5dB
Channel Unbalance : < ±1dB
Distortion THD (0dB, 1kHz) : < 0.3%
Channel Separation (1kHz) : > 35dB
Frequency Response (±3dB) : 20Hz-20kHz
Signal to Noise Ratio : > 60dBA

[....] Values indicated are for "ECO6 Cenelec Board" only.

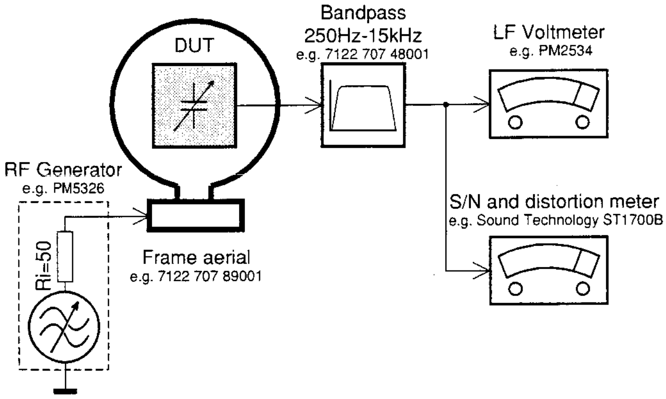
MEASUREMENT SETUP

Tuner FM


Bandpass
250Hz-15kHz
e.g. 7122 707 48001
DUT
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50
S/N and distortion meter
e.g. Sound Technology ST1700B

Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

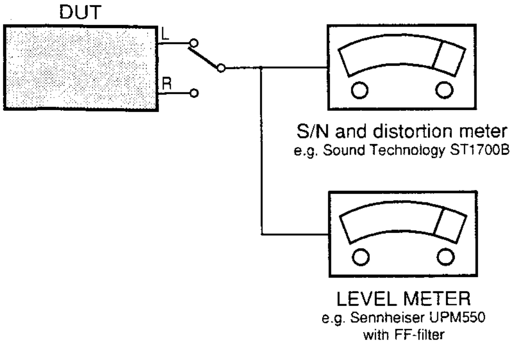
Tuner AM (MW,LW)


Bandpass
250Hz-15kHz
e.g. 7122 707 48001
DUT
LF Voltmeter
e.g. PM2534
RF Generator
e.g. PM5326
Ri=50
Frame aerial
e.g. 7122 707 89001
S/N and distortion meter
e.g. Sound Technology ST1700B

To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

CD

Use Audio Signal Disc SBC429 4822 397 30184 (replaces test disc 3)


DUT
L
R
S/N and distortion meter
e.g. Sound Technology ST1700B
LEVEL METER
e.g. Sennheiser UPM550
with FF-filter

SERVICE AIDS

Service Tools:

Universal Torx driver holder	4822 395 91019
Torx bit T10 150mm	4822 395 50456
Torx driver set T6 - T20	4822 395 50145
Torx driver T10 extended	4822 395 50423

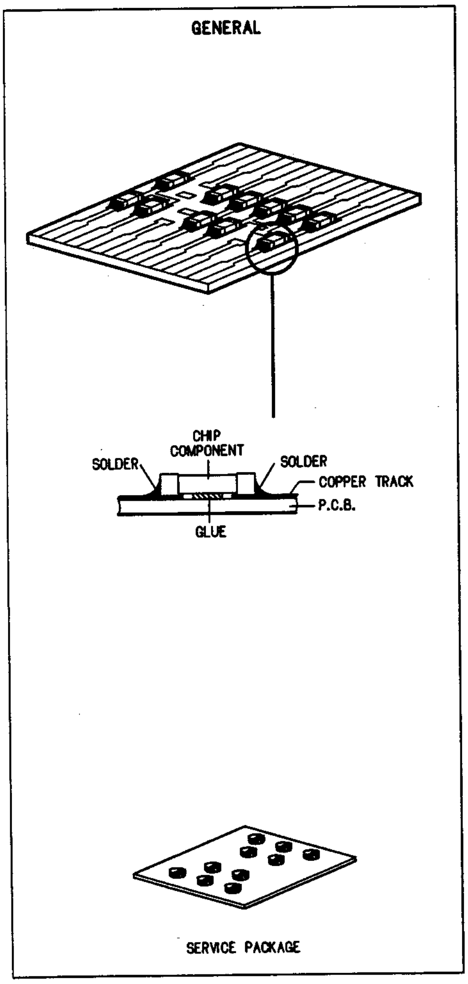
Compact Disc:

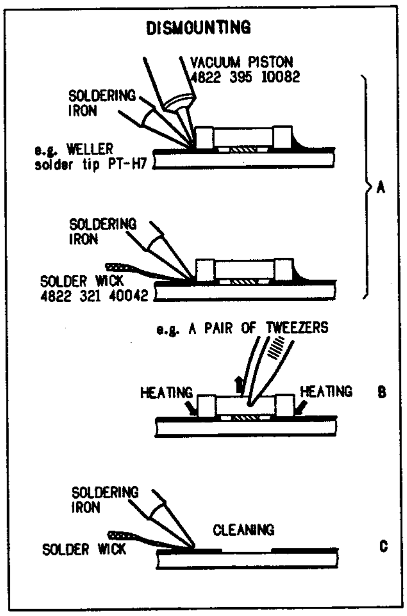
SBC426/426A Test disc 5 + 5A	4822 397 30096
SBC442 Audio Burn-in Test disc 1kHz	4822 397 30155
SBC429 Audio Signals disc	4822 397 30184
Dolby Pro-logic Test Disc	4822 395 10216

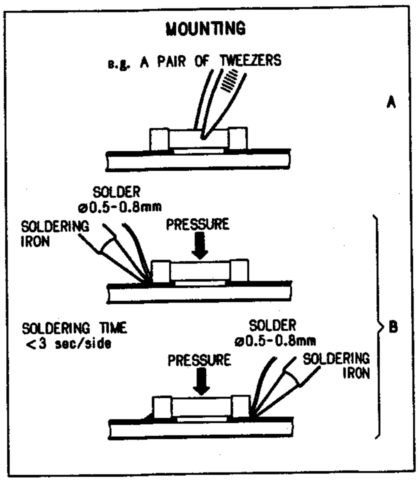
ESD Equipment:

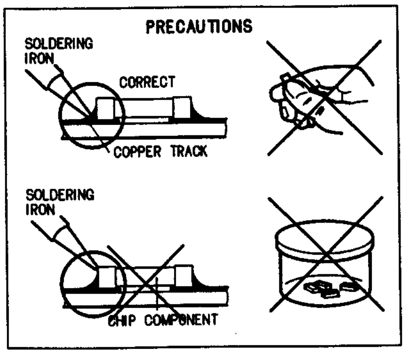
Anti-static table mat - large 1200x650x1.25mm	4822 466 10953
Anti-static table mat - small 600x650x1.25mm	4822 466 10958
Anti-static wristband	4822 395 10223
Connector box (1MΩ)	4822 320 11307
Extension cable (to connect wristband to conn. box)	4822 320 11305
Connecting cable (to connect table mat to conn. box)	4822 320 11306
Earth cable (to connect product to mat or box)	4822 320 11308
Complete kit ESD3 (combining all above products)	4822 320 10671
Wristband tester	4822 344 13999

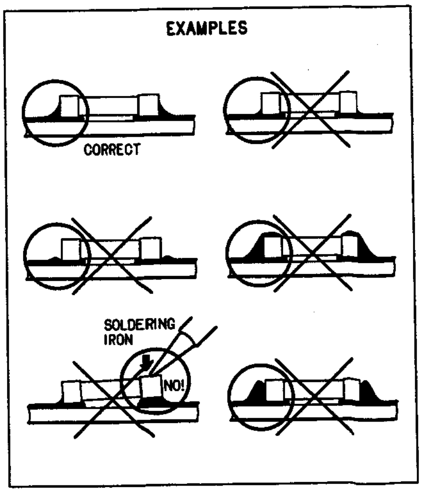
HANDLING CHIP COMPONENTS


GENERAL
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE


DISMOUNTING
VACUUM PISTON
4822 395 10082
SOLDERING IRON
e.g. WELLER
solder tip PT-H7
A
SOLDERING IRON
SOLDER WICK
4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
CLEANING
SOLDER WICK
C


MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER
ø0.5-0.8mm
SOLDERING IRON
PRESSURE
SOLDERING TIME
<3 sec/side
SOLDER
ø0.5-0.8mm
PRESSURE
SOLDERING IRON
B


PRECAUTIONS
SOLDERING IRON
CORRECT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT


EXAMPLES
CORRECT
SOLDERING IRON
NO!

(GB) WARNING

ll ICs and many other semi-conductors are usceptible to electrostatic discharges (ESD). areless handling during repair can reduce life rastically.
Vhen repairing, make sure that you are onnected with the same potential as the mass f the set via a wrist wrap with resistance. eep components and tools also at this otential.

(F) ATTENTION

ous les IC et beaucoup d'autres emi-conducteurs sont sensibles aux écharges statiques (ESD).
eur longévité pourrait être considérablement courtée par le fait qu'aucune précaution n'est rise à leur manipulation.
ors de réparations, s'assurer de bien être relié u même potentiel que la masse de l'appareil et nfiler le bracelet serti d'une résistance de écurité.
eiller à ce que les composants ainsi que les utils que l'on utilise soient également à ce otentiel.

ESD

(D) WARNUNG

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

(NL) WAARSCHUWING

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used

Safety components are marked by the symbol ⚠.

(NL)

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbool ⚠

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués ⚠

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenty di sicurezza sono marcati con ⚠

(GB)

After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist. The leakage current must not exceed 0.5mA.

CLASS 1
LASER PRODUCT

(GB) Warning !

Invisible laser radiation when open.
Avoid direct exposure to beam.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

(SF) Varoitus !

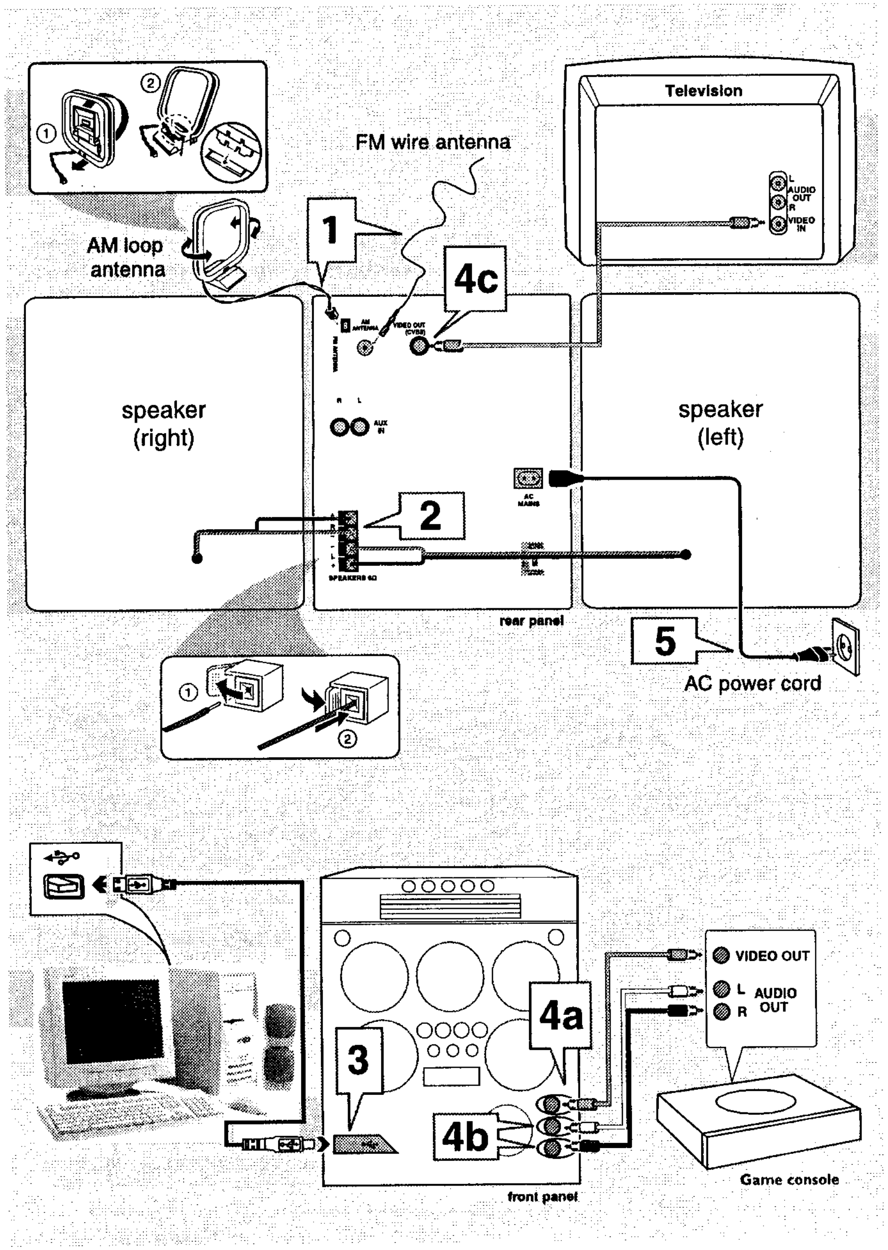
Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

(DK) Advarse !

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

(F)

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".



Warning!

– Use only the supplied speakers. The combination of the main unit and speakers provides the best sound. Using other speakers can damage the unit and sound quality will be negatively affected.

– Never make or change connections with the power switched on.

– Connect the AC power cord to the power outlet only after you have finished hooking up everything.

– To avoid overheating of the system, a safety circuit has been built in. Therefore, your system may switch to Standby mode automatically under extreme conditions. If this happens, let the system cool down before reusing it *(not available for all versions).*

Step 1: Connecting FM/MW antennas

– Place the MW loop antenna on a shelf or attach it to a stand or wall.

– Extend the FM antenna and fix its ends to the wall.

– Adjust the position of the antennas for optimal reception.

– Position the antennas as far as possible from a TV, VCR or other radiation source to prevent unwanted noise.

– For better FM stereo reception, connect external FM antenna.

Refer to page 10.

Step 2: Connecting the speakers

Connect the speaker wires to the SPEAKERS terminals, right speaker to "**R**" and left speaker to "**L**", coloured (marked) wire to "+" and black (unmarked) wire to "–". Fully insert the stripped portion of the speaker wire into the terminal as shown on page 10.

Notes:

– Ensure that the speaker cables are correctly connected. Improper connections may damage the system due to short-circuit.

– Do not connect more than one speaker to any one pair of +/- speaker terminals.

Step 3: Connecting to PC via USB cable

Use the supplied USB cable to connect the system to your personal computer's USB port. After installing the USB PC LINK application software onto your PC, you are able to play your music collection via the system (refer to "**USB PC Link**").

Step 4: Connecting to game console

IMPORTANT!

Gameport inputs are solely for game console only.

a. Use the game console's video cable (not supplied) to connect its video output to the GAMEPORT-**VIDEO** terminal.

b. Use the game console's audio cables (not supplied) to connect its audio outputs to the GAMEPORT-**AUDIO L. / AUDIO R.** terminals.

c. Use the video cable (yellow) to connect the **VIDEO OUT** terminal to the video input on the TV for viewing.

Notes:

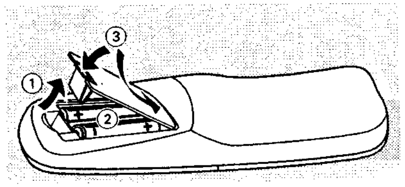
– On the TV, the Video Input jack is usually yellow and might be labeled A/V In, CVBS, Composite or Baseband.

– To avoid magnetic interference, do not position the front speakers too close to your TV.

Step 5: Connecting the AC power cord

"AUTO INSTALL - PRESS PLAY" may appear on the display panel when the AC power cord is plugged into the power outlet for the first time. Press ▶II on the main unit to store all available radio stations *(page 3 - P3)* or press ■ to exit (refer to "Tuner Operations").

Step 6: Inserting batteries into the remote control



① Open the battery compartment cover.

② Insert two batteries type R06 or AA, following the indications (+ —) inside the compartment.

③ Close the cover.

Using the remote control to operate the system

① Aim the remote control directly at the remote sensor (iR) on the main unit.

② Select the source you wish to control by pressing one of the source select keys on the remote control (for example CD,TUNER).

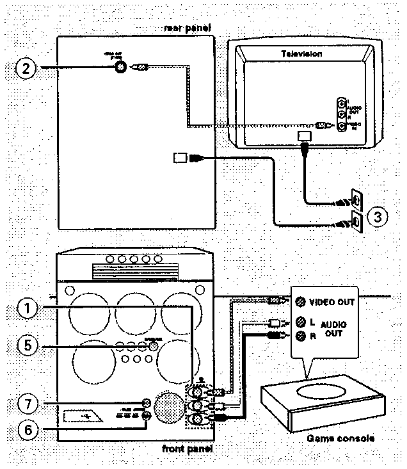
③ Then select the desired function (for example ▶II, I◀, ▶I).

CAUTION!
– Remove batteries if they are exhausted or will not be used for a long time.
– Do not use old and new or different types of batteries in combination.
– Batteries contain chemical substances, so they should be disposed of properly.

About Gameport

Gameport allows you to connect your game console to this mini system which enables you to enjoy a total game immersion experience through powerful sound output.

Preparation before use



① Connect your game console's video and audio output to the GAMEPORT video and audio inputs respectively (refer to "**Connections - Connecting to game console**).

② Connect your TV's video input to the **VIDEO OUT** (**CVBS**) on the rear panel.

③ Connect all the AC power cord to the power outlet.

Starting operation

④ Turn on the TV and set to the correct video-in channel.
The TV's video input channel may be called AUX(iliary) IN, AUDIO/VIDEO (A/V) IN, EXT 1, etc. These channels are often near channel 00 on your TV. Or, your TV remote control may have a button or switch that chooses different video modes. See your TV manual for details.

⑤ Press **AUX•GAME** until "GAMEPORT" is display.

⑥ Press **MODE** (or **GAME SOUND** on remote) to select the type of sound setting that best suit the game : **SPEED, PUNCH, BLAST** or **OFF**.

⑦ If you like to mix your game sound to your favourite music, press **MIX-IT** to select the desired music source : **CD, TUNER, USB PC LINK, AUX** or **OFF**.
CD → "MIX-CD"
TUNER → "MIX-TU"
USB PC LINK → "MIX-USB"
AUX → "MIX-AUX"
OFF → "MIX-OFF"

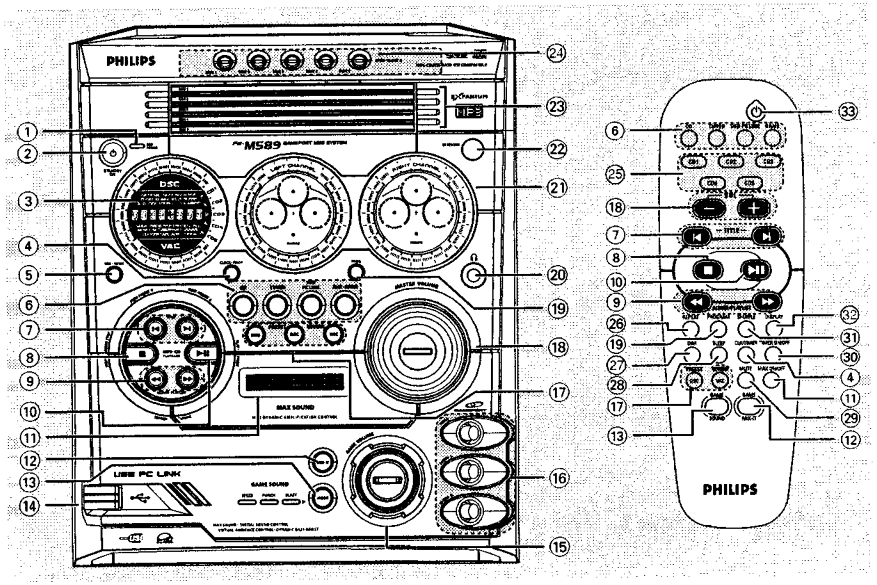
Note:
– To change the disc tray, you have to press CD, then press CD 1~5 to select the desired disc tray.

⑧ If necessary, start playback of your chosen mixer source.

⑨ Start playing your favourite game.

To adjust the game console's volume level
Adjust **GAME VOLUME**.

Notes:
– You can only activate GAME VOLUME and MIX-IT while in the game source mode.
– If your game console is switched on, the video image will always appear on the TV even though you are not in the gameport mode.



Main unit and remote control

① **ECO POWER indicator**
- Lights up when the system is in Eco Power standby mode.

② **STANDBY ON ⏻**
- Switches to Eco Power standby mode or turns on the system.
- *Switches to standby mode.

③ **Display screen**

④ **CLOCK•TIMER (CLK/TIMER)**
- *Enters clock or timer setting mode.

⑤ **RDS•NEWS**
- In tuner mode, selects RDS information.
- In other modes, turns on/off news.

⑥ **CD / TUNER / USB PC LINK / AUX•GAME**
- Selects the relevant active mode.
- **CD:** toggles between DISC 1~5.
- **TUNER:** toggles between FM and MW band.
- **AUX•GAME:** toggles between AUX and GAMEPORT mode.

⑦ **PREV•PRESET ▼ (TITLE –) (⏮) NEXT•PRESET ▲ (TITLE +) (⏭)**
- **CD:** selects a track or selects a title from MP3 disc.
- **TUNER:** selects a preset radio station.
- **CLOCK:** sets the minutes.
- **USB PC LINK:** selects a track from the playlist.

⑧ **STOP•DEMO STOP ■**
- Exits an operation.
- **CD:** stops playback or clears a programme.
- **TUNER:** *erases a preset radio station.
- **USB PC LINK:** stops playback.

(only on the main unit)
- *Turns on/off the demonstration mode.

⑨ **SEARCH•TUNING (ALBUM/PLAYLIST ▼▲) (◀◀ ▶▶)**
- **CD:** *searches backward/forward or selects an album from MP3 disc.
- **TUNER:** tunes the radio frequency up/down.
- **CLOCK:** sets the hours.
- **USB PC LINK:** Select your desired playlist.

**** = Press and hold the button for more than two seconds.***

⑩ **PLAY•PAUSE ▶❙❙**
- **CD:** starts/pauses playback.
- **USB PC LINK:** starts/pauses playback.

(only on the main unit)
- **TUNER:** *enters Plug & Play mode and/or starts preset radio station installation.

⑪ **MAX SOUND (MAX ON/OFF)**
- Turns on/off the optimal mix of various sound features.

⑫ **MIX IT (GAME MIX IT)**
- Mixes the game sound with your favourite music from one of these music sources (CD,TUNER, USB PC LINK or AUX).

⑬ **MODE (GAME SOUND)**
- Selects different type of equaliser setting for Gameport (SPEED, PUNCH or BLAST).

⑭ Connect the USB cable between the system and PC's USB port.

⑮ **GAME VOLUME**
- Adjusts the game's output volume level.

⑯ **VIDEO**
- Use a video cable to connect to your game console's video output.

AUDIO L. / AUDIO R.
- Use an audio cable to connect to your game console's left/right audio output.

⑰ **DBB**
- Selects different type of bass boost level settings (DBB 1, DBB 2, DBB 3 or DBB OFF).

DSC/PRESET
- Selects different type of preset sound equaliser settings (OPTIMAL, JAZZ, ROCK or POP).

VAC/REVERB
- Selects different type of ambience-based equaliser settings (HALL, CINEMA, CONCERT, CYBER or ARCADE).

• PRESET and REVERB environment sound modes are only available when the optional software, Philips Sound Agent 2 is activated during USB PC Link application.

**** = Press and hold the button for more than two seconds.***

⑱ **MASTER VOLUME (VOL + –)**
- Adjusts the volume level.

⑲ **PROG (PROGRAM)**
- **CD:** starts or confirms tracks programming.
- **TUNER:** starts *automatic/manual preset programming.
- **CLOCK:** selects 12- or 24-hour clock display.

⑳ 🎧
- Plug in the headphones jack. The speakers output will be cancelled.

㉑ **VU meters**
- Indicates signal strength of left/right channel.

㉒ **iR SENSOR**
- Point the remote control towards this sensor.

㉓ **Disc trays (1~5)**

OPEN•CLOSE ⏏ (DISC 1~5)
- Opens/closes the respective disc tray.

Control buttons available on the remote control only

CD 1~5
- Selects a disc tray to playback.

㉖ **REPEAT**
- Repeats a track/disc/all programmed tracks.

DIM
- Turns on/off the dim mode.

㉘ **SLEEP**
- Sets the sleep timer function.

㉙ **MUTE**
- Mutes or restores the volume.

㉚ **TIMER ON/OFF**
- Turns on/off the timer function.

㉛ **SHUFFLE**
- Turns on/off the random play mode.

DISPLAY
- Displays the album and title name for MP3 disc.

㉝ ⏻
- Switches to Eco Power standby mode.
- *Switches to standby mode.

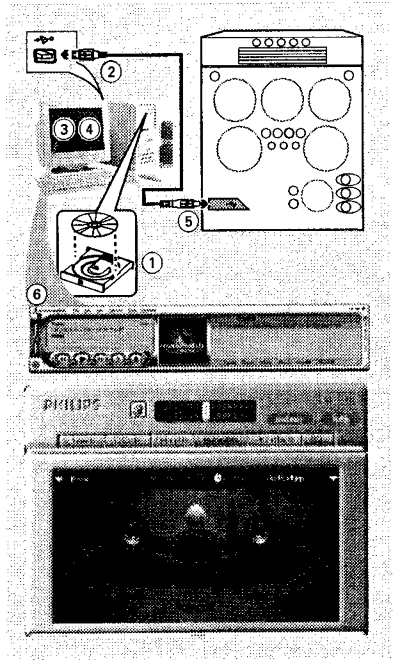
IMPORTANT!
– Make sure the mute setting on your PC control panel is deactivated to ensure you get the sound from your audio system!

Quick setup guide

PC system requirement

- Windows 98SE/ME/2000/XP
- Intel Pentium MMX200 or higher
- CD-ROM drive
- USB port
- Free hard disk space: 80 MB for the software

Software installation



① Turn on your PC and insert the installer disc into your PC's CD-ROM drive.

② The installation guide will appear automatically. If it does not, go to the CD-ROM drive in Windows Explorer and double click the **Setup.exe**.

③ Select your desired language from the list.

④ Select **install Software**.

⑤ Connect the USB cable to the PC and Audio System and press the USB PC Link button on the Audio set or the remote control.

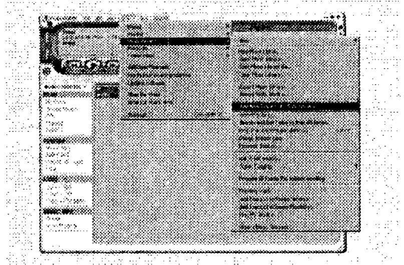
⑥ Follow the instructions as prompted on the screen to correctly install the USB PC Link Driver, **Philips Sound Agent 2** and **MusicMatch** Jukebox software.

Notes:
– Minimum OS requirement for Philips Sound Agent 2: Windows 2000 or XP.
– During installation, your previous MusicMatch Jukebox software on your PC will be replaced.

Declarations
Windows and **Pentium** are trademarks of Microsoft Corporation and Intel Corporation. All other trademarks belong to their respective owners.
USB PC Link sample track, music by Chemistry (www.chemistryteam.com)

Using MusicMatch software

To create a music library



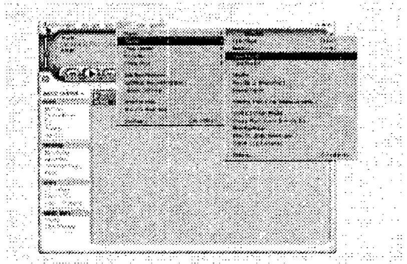
Add music files to **My Music Library**

Add files to **My Library** by dragging and dropping audio tracks from anywhere in Windows, into the **My Library** window.

You can also click **Add Files** in the **Music Center** to add tracks.

① Click the **Add Files** button on the **Music Library** window.
② Browse your computer to the folder where audio files are stored. Check the box **Also Add Tracks** from Subfolders to add all tracks in the current folder, and all subfolders.
③ Click the **Select All** button to select all the files in the current, and all subfolders.
④ Click **Add**.
Files will be added to **My Library**.

To create a "Playlist"



① Drag and drop files, or folders with music files, from anywhere on your computer or **My Library** into the **Playlist** window. Your files will begin to play. Or, you may click the **Open** button on the **Playlist** window to browse for and add music to the **Playlist**.

② Click the **Save** button on the **Playlist**, or go to the menu **Options>Playlist>Save Playlist**.

③ You will be prompted to name the **Playlist**. In the Name field type the name you'd like to give this **Playlist**.

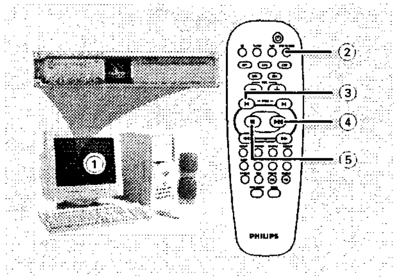
④ Click the **Save** button. Now you can play all the saved playlists with the audio system by pressing ⏮ or ⏭ buttons. Details operation, please refer to Connecting to **USB PC Link**.

Note:
– It is not possible to create a playlist from the system's 5 CD changer. If you encounter any problem using USB PC Link, please refer to the FAQ (Frequently Asked Questions) stored in your USB PC Link installer disc or visit "www.audio.philips.com" for the latest update on FAQ.

Connecting to USB PC Link

USB PC Link allows you to playback your music collection from the PC via the powerful amplifier and speakers of this system.

IMPORTANT!
Make sure the MUSICMATCH software has been installed. Refer to the CD-ROM sleeve for USB PC Link installation.



① Turn on your computer and launch the "MUSICMATCH JUKEBOX".
The volume level of PC should not be put into mute.

② Press **USB PC LINK**.
If the audio streaming is detected, "CONNECTING" is displayed and the USB indicator will be flashing.
If "NO CONNECTION" is displayed, check the connection between your PC and micro system.

USB PC Link

Notes:
– When the USB PC Link feature is activated, Philips Sound Agent 2 will automatically be launched (if it has been successfully installed under OS Windows 2000/XP).
– The default setting for PRESET/REVERB is MP3/ Study Room respectively. You may select from the list of different sound modes to suit your music and environment preference. Alternatively, you may select PRESET (Neutral mode) and REVERB (No Environment mode) for the minimum sound effect.

③ Press ◀◀ or ▶▶ to select your favorite playlist, and then press |◀ or ▶| until the desired track in the playlist is highlighted.

④ Press ▶ ❚❚ to start playback.
The track information will appear on the display. The display only supports English characters.

During playback,
– Press **SHUFFLE** to play all available tracks in the playlist in random order.
– Press **REPEAT** to repeat playback of all the tracks in the playlist.

⑤ To exit, select another active mode or press ■.

Philips Sound Agent 2

Philips Sound Agent 2 is a BONUS software provided with Philips Audio system to enhance the quality of MP3 Music playback via USB PC Link.

① **Philips Sound Agent 2** will be automatically launched if USB PC Link is selected.
② Press **DSC/PRESET** or **VAC/REVERB** to select different Preset or Reverb sound effect.
③ For more details about using **Philips Sound Agent 2** features on your PC, please refer to the User Manual in the supplied CD-ROM or the Help menu.

Notes:
– Philips Sound Agent 2 minimum OS requirement: Windows 2000 or XP.
– Please refer to the CD-ROM sleeve for detailed installation procedures, OR 'Software installation' in this manual.

Enabling digital CD audio output

Before playing the CD through your PC's CD-ROM drive, it is necessary to configure your PC's hardware as follows:

For Windows ME/2000/XP

① Enter the system control panel menu and select:
"System → Hardware → Device Manager → CD-ROM drives → Action-Properties → Properties ".

OR

For Windows 98SE

Enter the system control panel menu and select: "MULTIMEDIA" and "CD MUSIC".

② Check the 'Enable digital CD audio for this CD-ROM device' setting option is selected (enabled).

Notes:
– You may need to refer to your PC's manual for correct configuration.
– For the optimal playback effect of the CD/MP3-CD, please use your Philips audio system.

WARNING
Under no circumstances should you try to repair the system yourself, as this will invalidate the warranty. Do not open the system as there is a risk of electric shock.

If a fault occurs, first check the points listed below before taking the system for repair. If you are unable to remedy a problem by following these hints, consult your dealer or Philips for help.

Problem	Solution
Auto Installation of the Installer CD-ROM did not install the Philips Sound Agent 2 onto my PC.	Check that your PC's Operating System is running on Windows 2000/XP.
When in USB PC LINK mode, "NO CONNECTION" is displayed.	Check the connection between your PC and the system and the initial setup required, see "Connections", "Software installation" and "USB PC Link". Make sure the connected PC is turned on.
I want the minimum effect from the Philips Sound Agent 2 sound mode when listening to MP3 music streaming via USB PC Link.	Select the PRESET - Neutral mode. Select the REVERB - No environment mode.
Radio reception is poor.	If the signal is too weak, adjust the antenna or connect an external antenna for better reception. Increase the distance between the system and your TV or VCR.
"NO DISC" is displayed or the disc cannot be played.	Insert a disc. Load in the disc with the labeled side facing up. Replace or clean the disc, see "Care and safety information". Use a finalised CD-R(W) or a correct format disc.
The system does not react when buttons are pressed.	Remove and reconnect the AC power cord and switch on the system again.
Sound cannot be heard or is of poor quality.	Adjust the volume. Disconnect the headphones. Check that the speakers are connected correctly. Check that the AC power cord is connected properly. When in USB PC LINK mode, check that the PC's volume is not muted. When playing CD from PC's CD drive, refer to "USB PC Link - Enable digital CD audio output".
The remote control does not function properly.	Select the source (CD or TUNER, for example) before pressing the function button (⏯, ⏮ ; ⏭). Reduce the distance between the remote control and the system. Replace the battery. Point the remote control directly toward the IR sensor.
The timer is not working.	Set the clock correctly. Press TIMER ON/OFF to switch on the timer.
The system displays features automatically and buttons start flashing.	Press and hold DEMO STOP on the main unit to switch off the demonstration mode.

Refer to the FAQ (Frequently Asked Questions) on the supplied CD-ROM or visit our website "www.audio.philips.com" for latest update on FAQ.

DISMANTLING INSTRUCTIONS

Dismantling of the 5DTC Module

1) Loosen 4 screws to remove the Cover Top (pos 255) by sliding it out towards the rear before lifting up.
    - 2 screws on the rear
    - 1 screw each on the left & right side

2) Loosen 3 screws each to remove the Panel Left (pos 253) and Panel Right (pos 254). The Panels are removed by sliding it towards the rear and outwards.
    - 2 screws on the rear
    - 1 screw on the side

3) To loosen the Panel Front Display (pos 120), you have to press in the correct direction and position as shown in Figure 1 and Figure 2. Once the Panel Front Display is loosen, remove it out in the direction as shown in Figure 3.

4) Loosen 4 screws A (see Figure 4 and Figure 16) to remove the 5DTC Module (pos 1105).
    - 2 screws on the front
    - 2 screws on the rear

Note : For information on the 'Emergency opening of the trays' of the 5DTC Module, refer to Chapter 10 (Page 10-7).

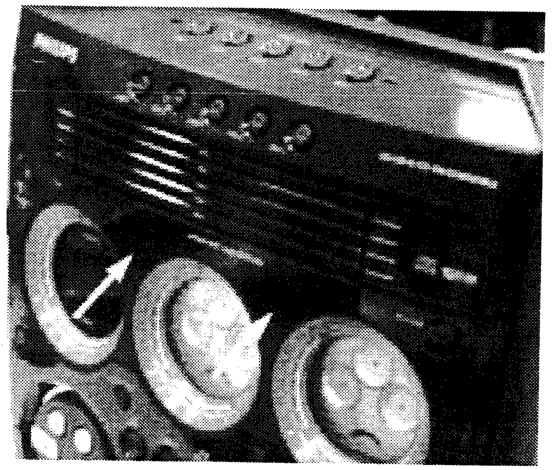


Figure 1

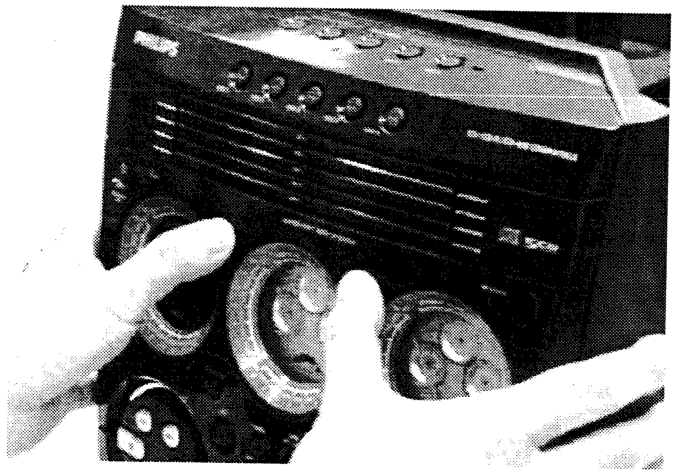


Figure 2

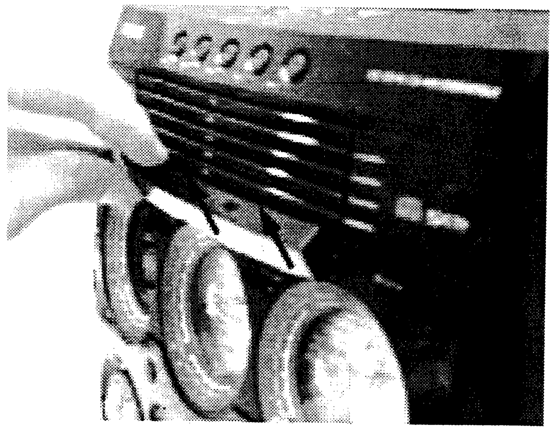


Figure 3

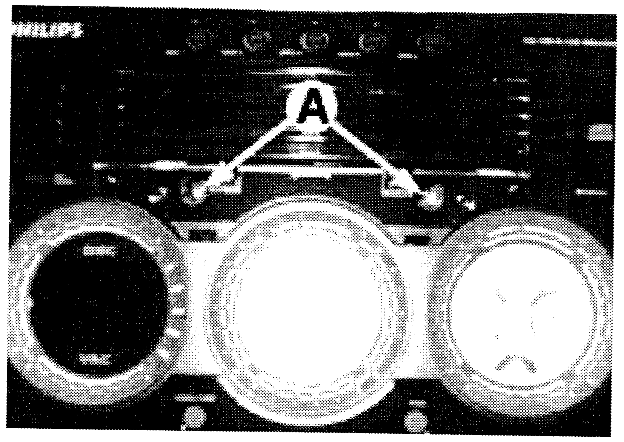


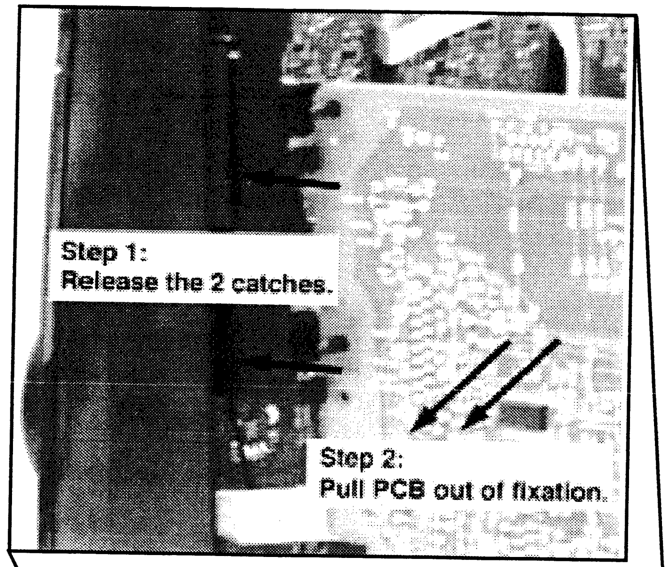
Figure 4

Detaching the Front Panel assembly from the Bottom/Rear assembly

1) Remove 2 screws B (pos 226) as shown in Figure 5 from the bottom of the Cabinet Front (pos 101).

2) Release the fixation of the AF Board (pos1102-A) to Bracket CDC Right (pos 186) by releasing the 2 catches C1 (see Figure 7) and pulling the AF Board outwards as shown in Figure 6.

3) Uncatch 2 catches C2 (see Figure 7) on the left & right sides of the Cabinet Front (pos 101) and slides the Front Panel assembly out towards the front.



Step 1:
Release the 2 catches.

Step 2:
Pull PCB out of fixation.

Figure 6

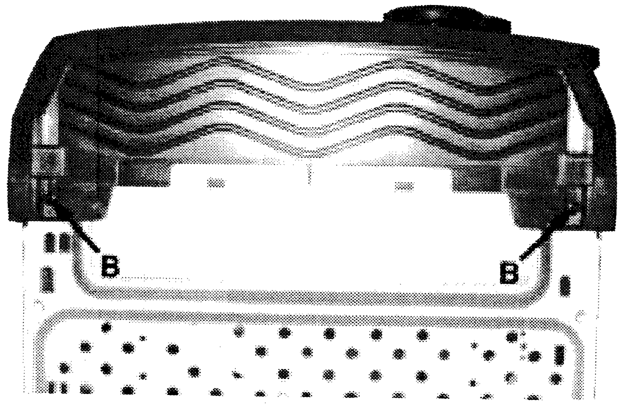


Figure 5

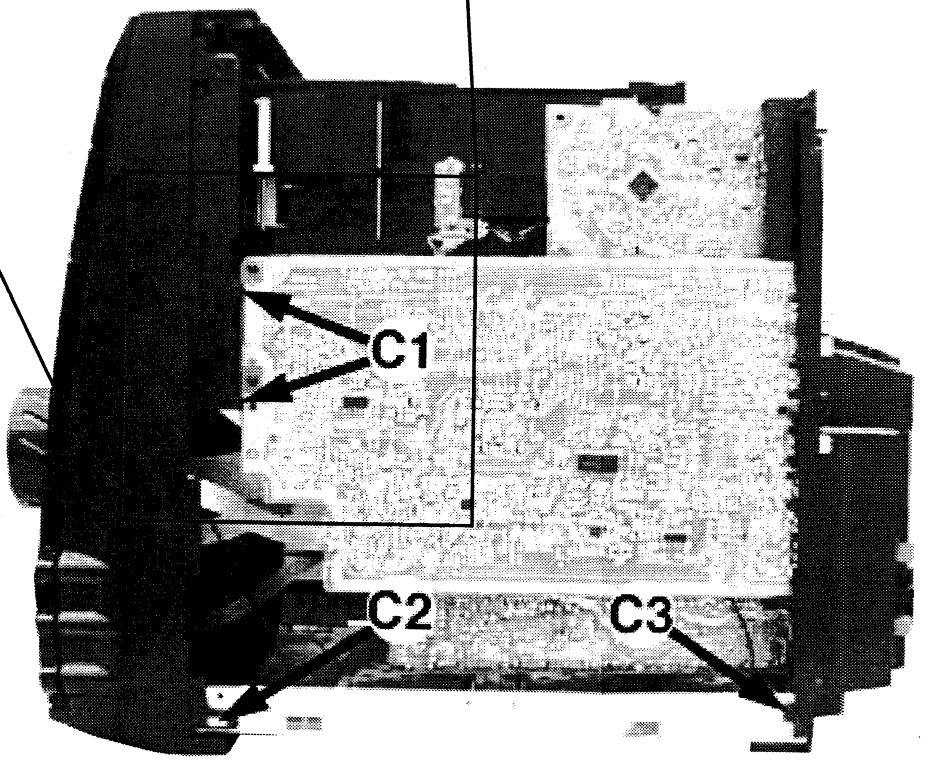


Figure 7

ISMANTLING INSTRUCTIONS

ismantling of the Front Control Board and Front Display Board

The Knob Volume Rotary (pos 164) can be remove by pulling it out in the direction as shown in Figure 8.

The Knob Game Sound Control (pos 176) can be remove by pulling it out in the direction as shown in Figure 9.

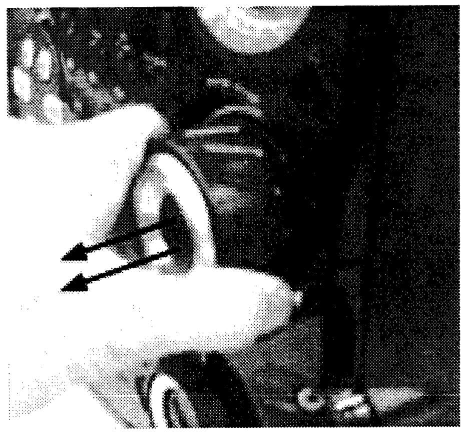


Figure 8

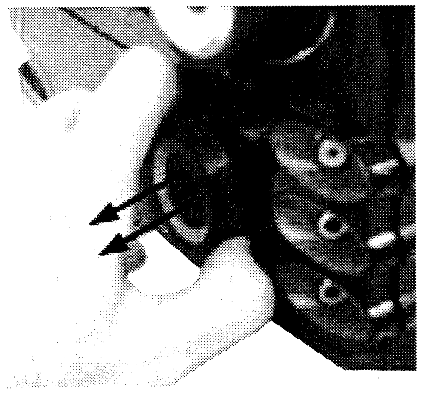


Figure 9

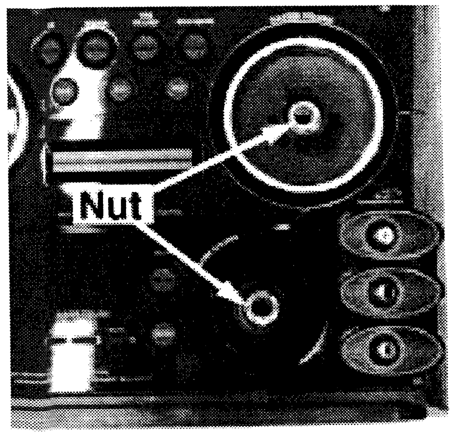


Figure 10

3) Loosen 4 screws D (see Figure 11) to remove the Bracket PCB Front Display (pos 183) and Front Display Board (pos 1101-A).

4) Loosen 1 screw E (see Figure 12) to remove the IR Eye Board (pos 1107-H).

5) Loosen 2 screws F (see Figure 12) to remove the ECO Power Board (pos 1107-E).

6) Loosen 3 screws G (see Figure 12) to remove the Bracket VU Meter 2 (pos 136) and loosen 2 screws H to remove the VU Meter Right Board (pos 1107-D) from the Bracket VU Meter 2.

7) Loosen 3 screws J (see Figure 12) to remove the Bracket VU Meter 1 (pos 129) and loosen 2 screws K to remove the VU Meter Left Board (pos 1107-C) from the Bracket VU Meter 1.

8) Loosen 2 screws L (see Figure 13) to remove the USB PC LINK Board (pos 1104).

9) Loosen 9 screws M (see Figure 13) and loosen the 2 nuts (see Figure 10) to remove the Front Control Board (pos 1107-A).

10) Loosen 1 screw N (see Figure 13) to remove the Headphone Board (pos 1107-B).

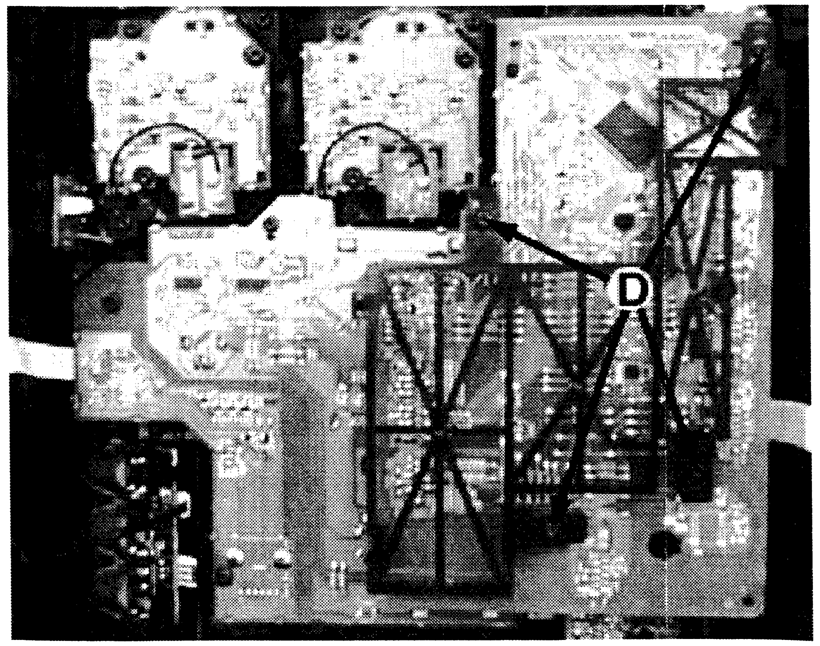


Figure 11

Dismantling of the Front Control Board and Front Display Board

11) Loosen 3 screws P (see Figure 14) to remove the Game Port Board (pos 1107-G).

12) Loosen 2 screws Q (see Figure 15) to remove the USB LED Board (pos 1107-F).

Figure 12

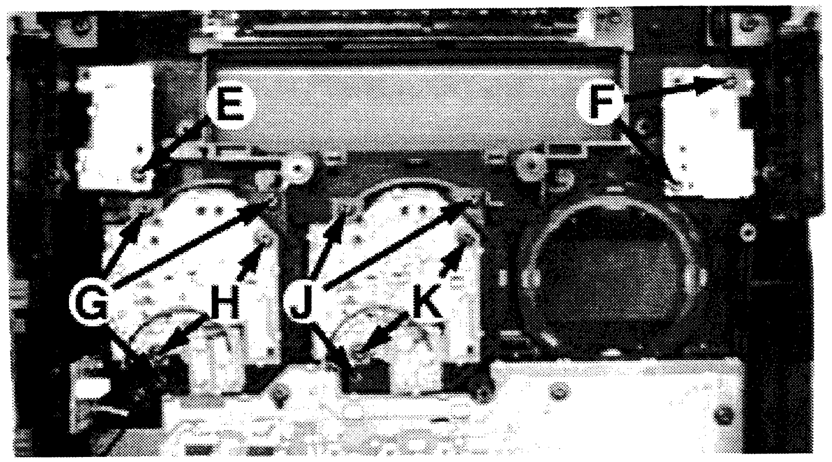
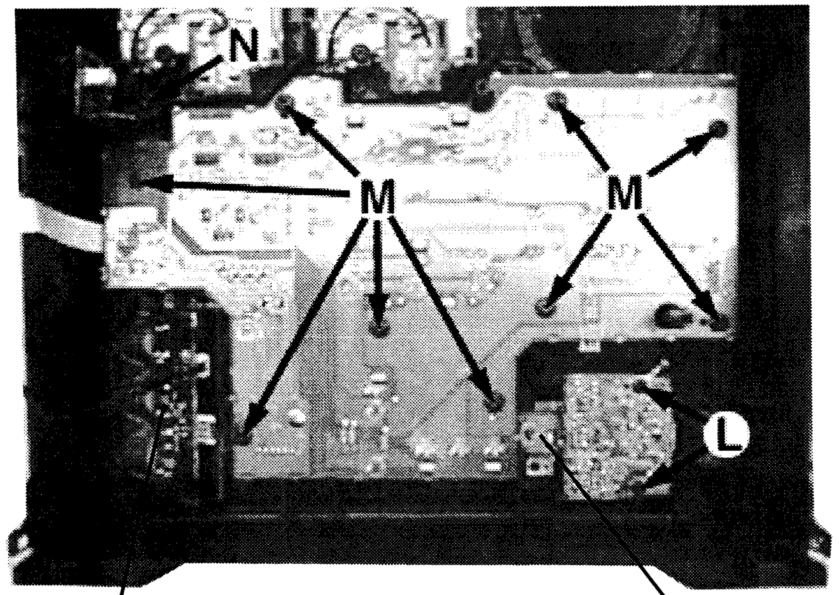


Figure 13



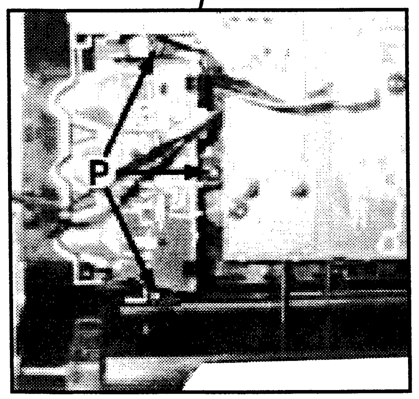


Figure 14

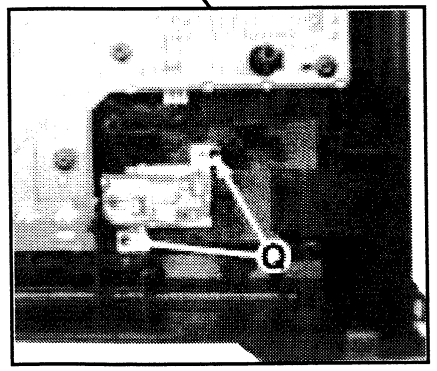


Figure 15

DISMANTLING INSTRUCTIONS

Dismantling of the Rear Panel assembly

1) Loosen 3 screws S and 2 catches C4 (see Figure 16) to remove the Tuner Board assembly.

2) Loosen 1 screw T (see Figure 16) to free the AF Board (pos 1102-A).

3) Loosen 1 screw U (see Figure 16) to remove the Video Cinch Out Board (pos 1102-B).

4) Loosen 1 screw V (see Figure 16) to free the Mains Socket Board (pos 1106-1001-B).

5) Loosen 4 screws W (see Figure 16) and 2 catches C3 (see Figure 7) to remove the Panel Rear (pos 256) by sliding it out towards the rear (see Figure 19).
Note : Tuner Board assembly and Mains Socket Board can also be remove together with the Panel Rear.

6) Loosen 2 screws Y (see Figure 17) and 2 catches C5 (see Figure 16) to remove the Bracket Fan (pos 266).

7) Loosen 4 screws Z (see Figure 18) to remove the Fan (pos 1121) from the Bracket Fan (pos 266).

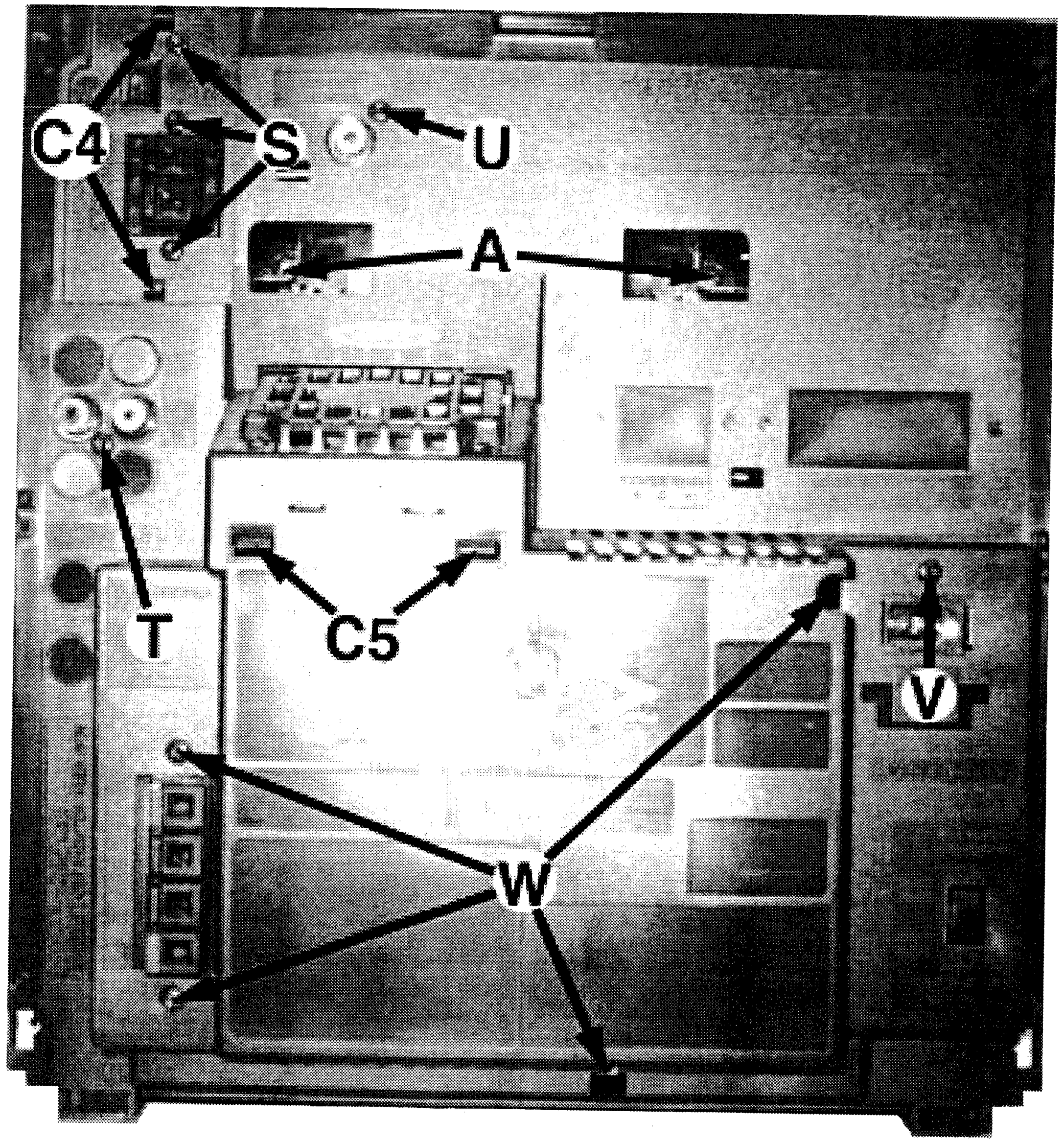


Figure 16

Dismantling of the Rear Panel assembly

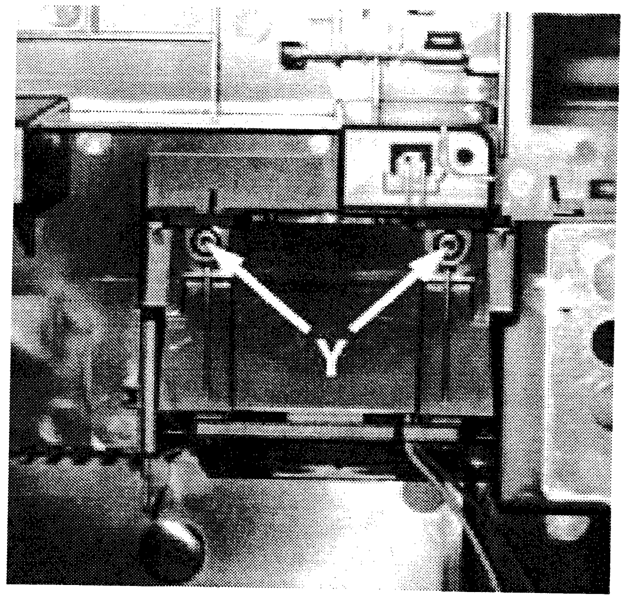


Figure 17

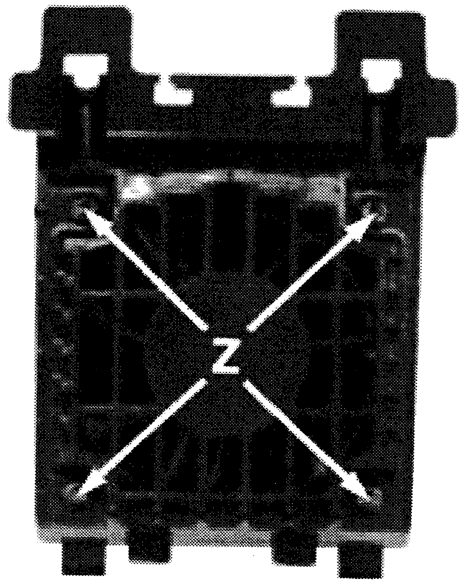


Figure 18

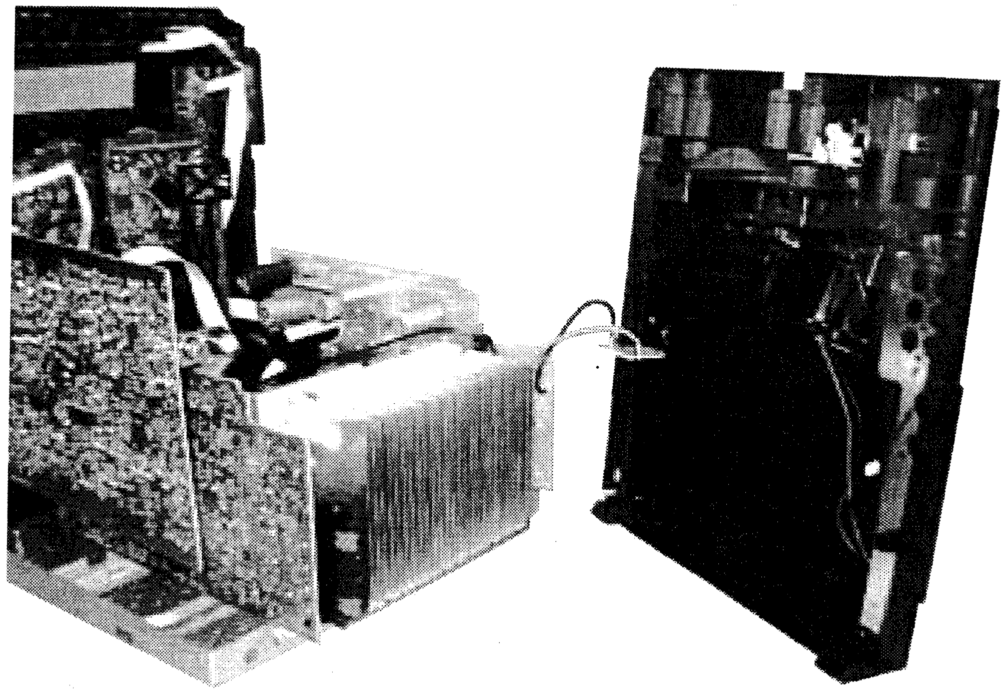


Figure 19

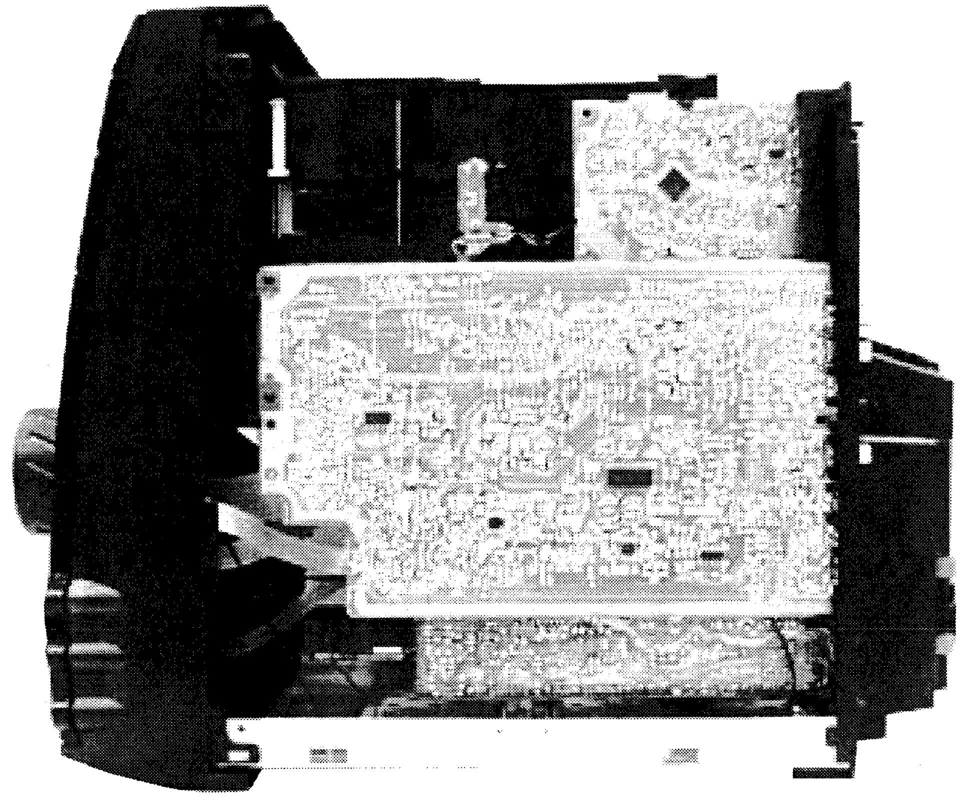
Repair Hints

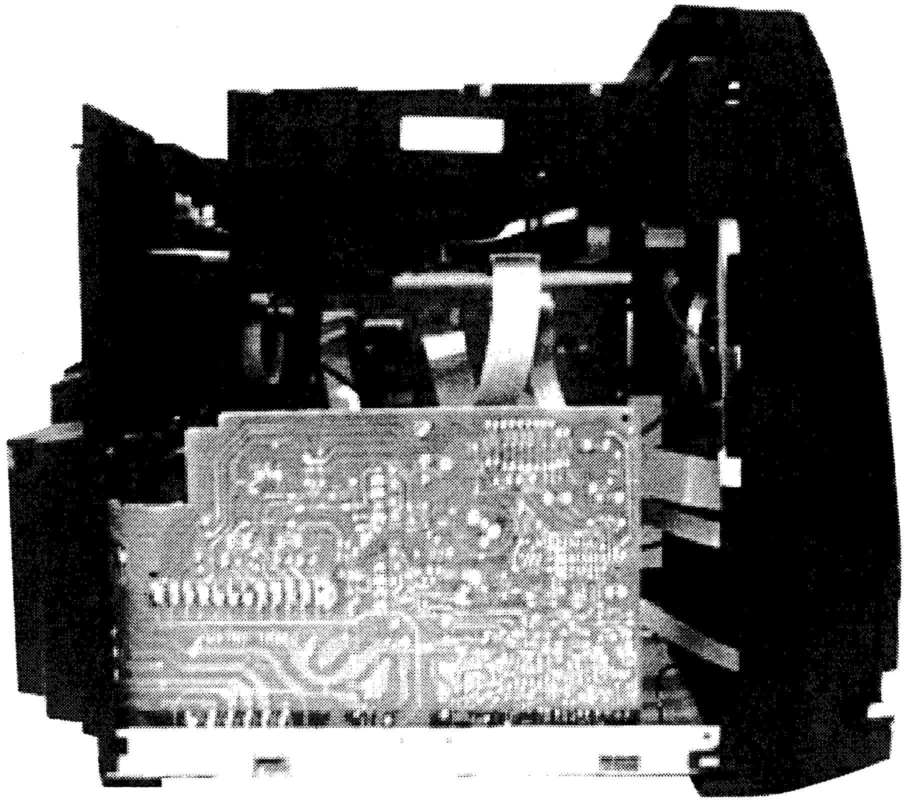
1) During repair it is possible to disconnect the ECO6 Tuner board and/or 5DTC Module completely unless the fault is suspected to be in that area. This will not affect the performance of the rest of the set.

Note: The flex cables are very fragile, care should be taken not to damage them during repair. After repair, be very sure that the flex cables are inserted properly into the flex sockets before encasing, otherwise faults may occurs.

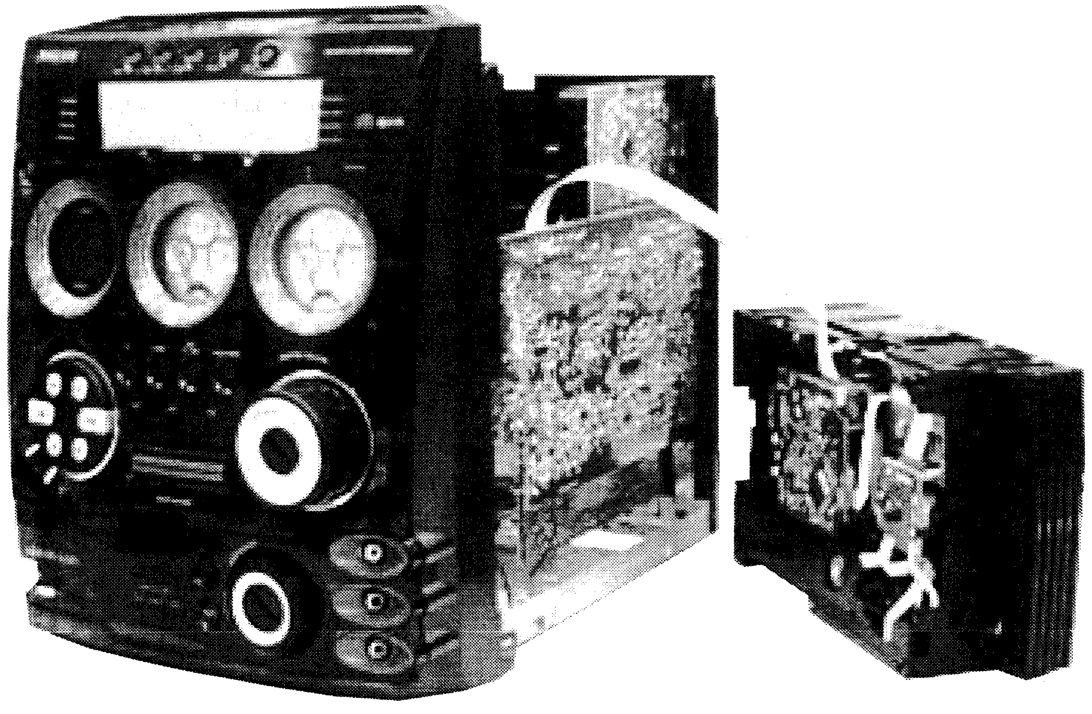
ISMANTLING INSTRUCTIONS

ervice position A

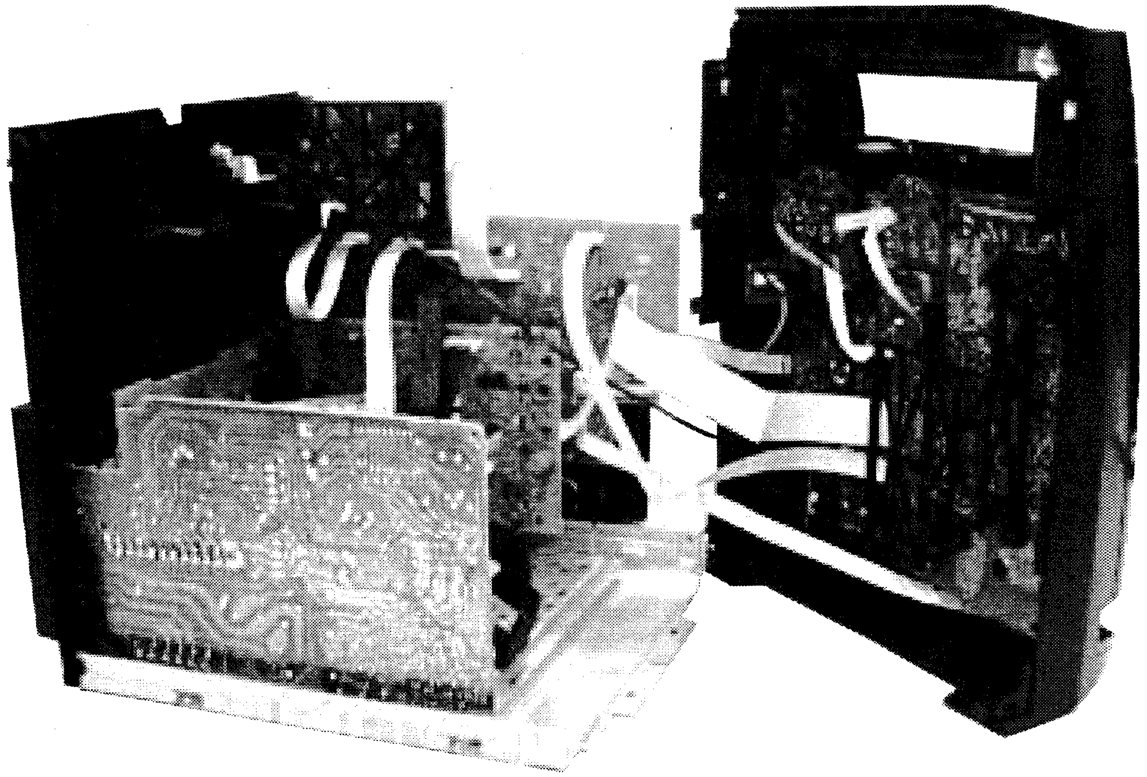




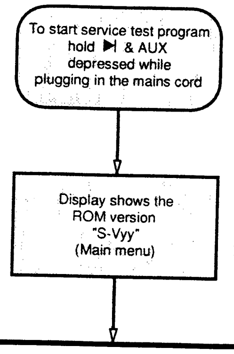
Service position B



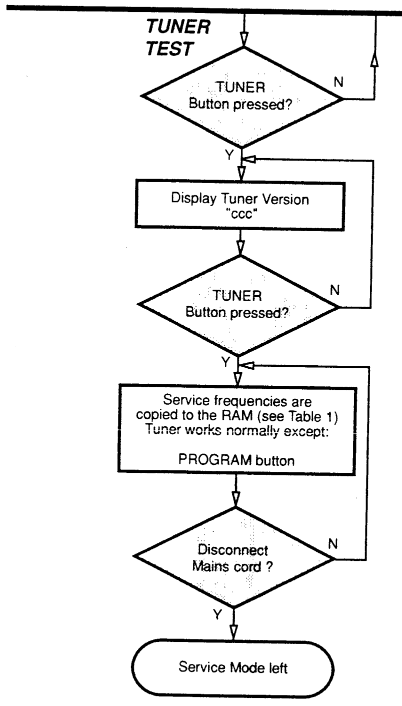
Service position C



SERVICE TEST PROGRAM


To start service test program hold ▶I & AUX depressed while plugging in the mains cord
Display shows the ROM version "S-Vyy" (Main menu)

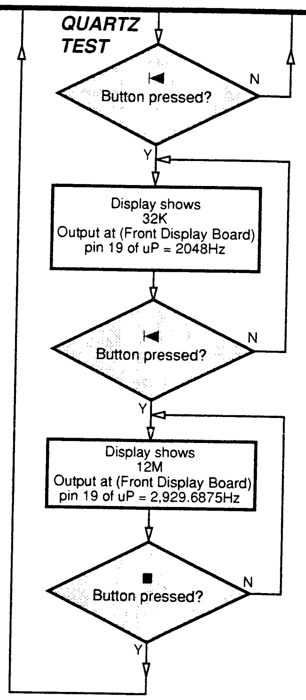
S refers to Service Mode
V refers to Version
yy refers to Software version number of the uProcessor (counting up from 01 to 99)


TUNER TEST
TUNER Button pressed?
N
Y
Display Tuner Version "ccc"
TUNER Button pressed?
N
Y
Service frequencies are copied to the RAM (see Table 1) Tuner works normally except:
PROGRAM button
Disconnect Mains cord ?
N
Y
Service Mode left

PRESET	Europe "EUR"	USA "USA"	Oversea "OSE"
1	87.5MHz	87.5MHz	87.5MHz
2	108MHz	108MHz	108MHz
3	531kHz	530kHz	531/530kHz*
4	1602kHz	1700kHz	1602/1700kHz*
5	558kHz	560kHz	558/560kHz*
6	1494kHz	1500kHz	1494/1500kHz*
7	153kHz	98MHz	87.5/98MHz*
8	279kHz	87.5MHz	87.5MHz
9	198kHz	87.5MHz	87.5MHz
10	98MHz	87.5MHz	87.5MHz
11	87.5MHz	87.5MHz	98/87.5MHz*

Table 1

Note:
* Depending on the selected grid frequency (9 or 10kHz).
By holding the TUNER and ▶▶ buttons depressed while switching on the Mains supply, the tuning grid frequency is toggled between 9kHz and 10kHz for the Oversea (/21) version.


QUARTZ TEST
I◀ Button pressed?
N
Y
Display shows 32K Output at (Front Display Board) pin 19 of uP = 2048Hz
I◀ Button pressed?
N
Y
Display shows 12M Output at (Front Display Board) pin 19 of uP = 2,929.6875Hz
■ Button pressed?
N
Y

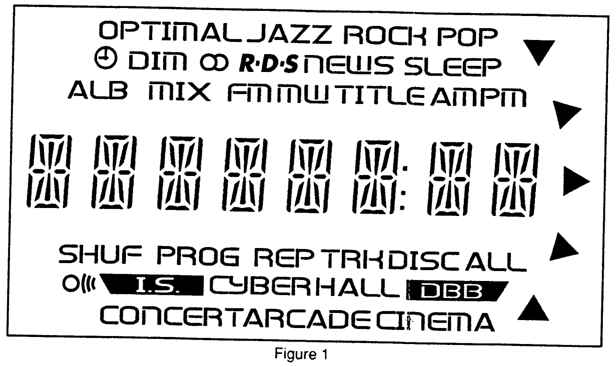

OPTIMAL JAZZ ROCK POP
DIM R·D·S NEWS SLEEP
ALB MIX FM MW TITLE AM PM
SHUF PROG REP TRK DISC ALL
I.S. CYBERHALL DBB
CONCERT ARCADE CINEMA

Figure 1

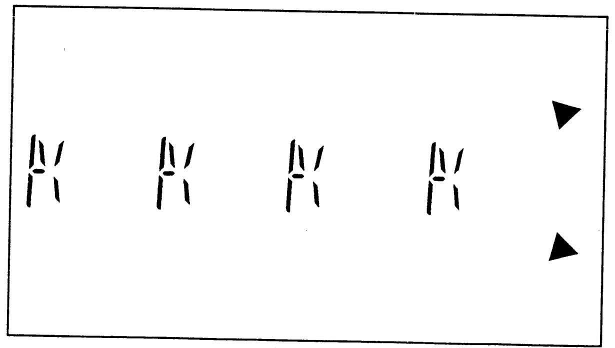
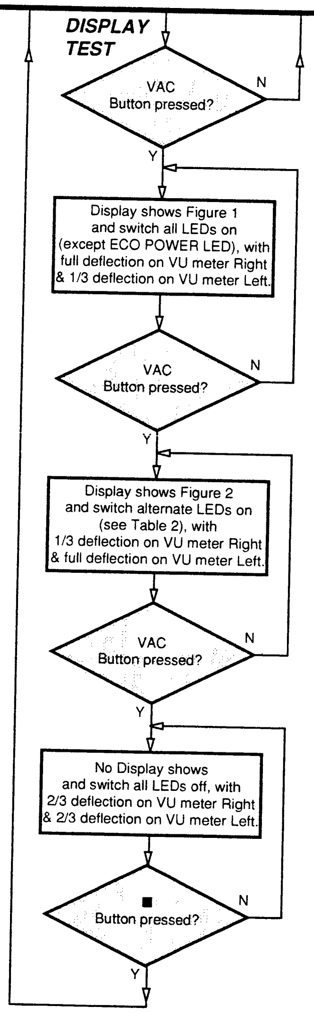


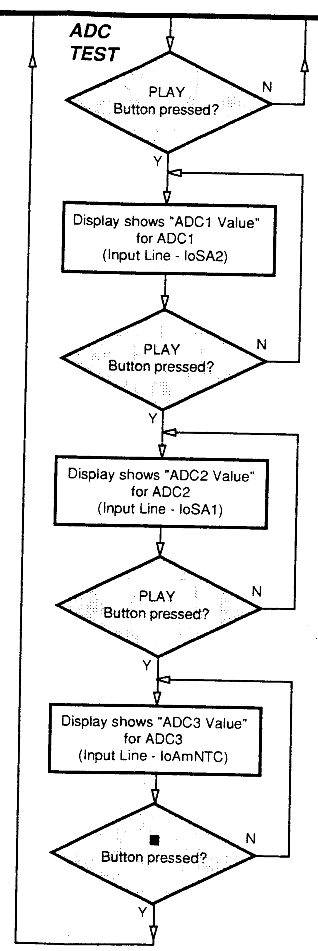
Figure 2

LEDs	FW-C557	FW-C577	FW-C579 FW-M589	FW-C777 FW-M777
CD	-	-	-	OFF
TUNER	-	-	-	ON
AUX / GAME	-	-	-	OFF
USB PC LINK	-	-	-	OFF
DISC 1	-	ON	ON	ON
DISC 2	-	OFF	OFF	OFF
DISC 3	-	ON	ON	ON
DISC 4	-	OFF	OFF	OFF
DISC 5	-	ON	ON	ON
^^ MAX 1 (WOOX 1)	OFF	OFF	OFF	OFF
^^ MAX 2 (WOOX 2)	ON	ON	ON	ON
^^ MAX 3 (WOOX 3)	OFF	OFF	OFF	OFF
SPEED	ON	ON	ON	ON
PUNCH	OFF	OFF	OFF	OFF
BLAST	OFF	OFF	OFF	OFF
USB Indicator	-	OFF	OFF	OFF

Table 2

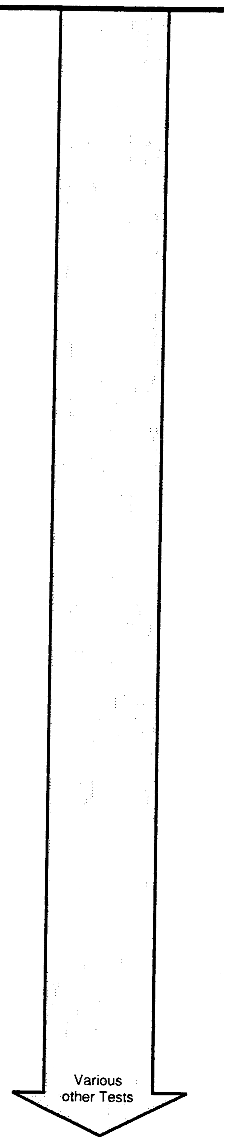
^^ MAX - FW-C557, FW-C577, FW-C579, FW-M567, FW-M589
WOOX - FW-C777, FW-M777


DISPLAY TEST
VAC Button pressed?
N
Y
Display shows Figure 1 and switch all LEDs on (except ECO POWER LED), with full deflection on VU meter Right & 1/3 deflection on VU meter Left.
VAC Button pressed?
N
Y
Display shows Figure 2 and switch alternate LEDs on (see Table 2), with 1/3 deflection on VU meter Right & full deflection on VU meter Left.
VAC Button pressed?
N
Y
No Display shows and switch all LEDs off, with 2/3 deflection on VU meter Right & 2/3 deflection on VU meter Left.
■ Button pressed?
N
Y


ADC TEST
PLAY Button pressed?
N
Y
Display shows "ADC1 Value" for ADC1 (Input Line - IoSA2)
PLAY Button pressed?
N
Y
Display shows "ADC2 Value" for ADC2 (Input Line - IoSA1)
PLAY Button pressed?
N
Y
Display shows "ADC3 Value" for ADC3 (Input Line - IoAmNTC)
■ Button pressed?
N
Y

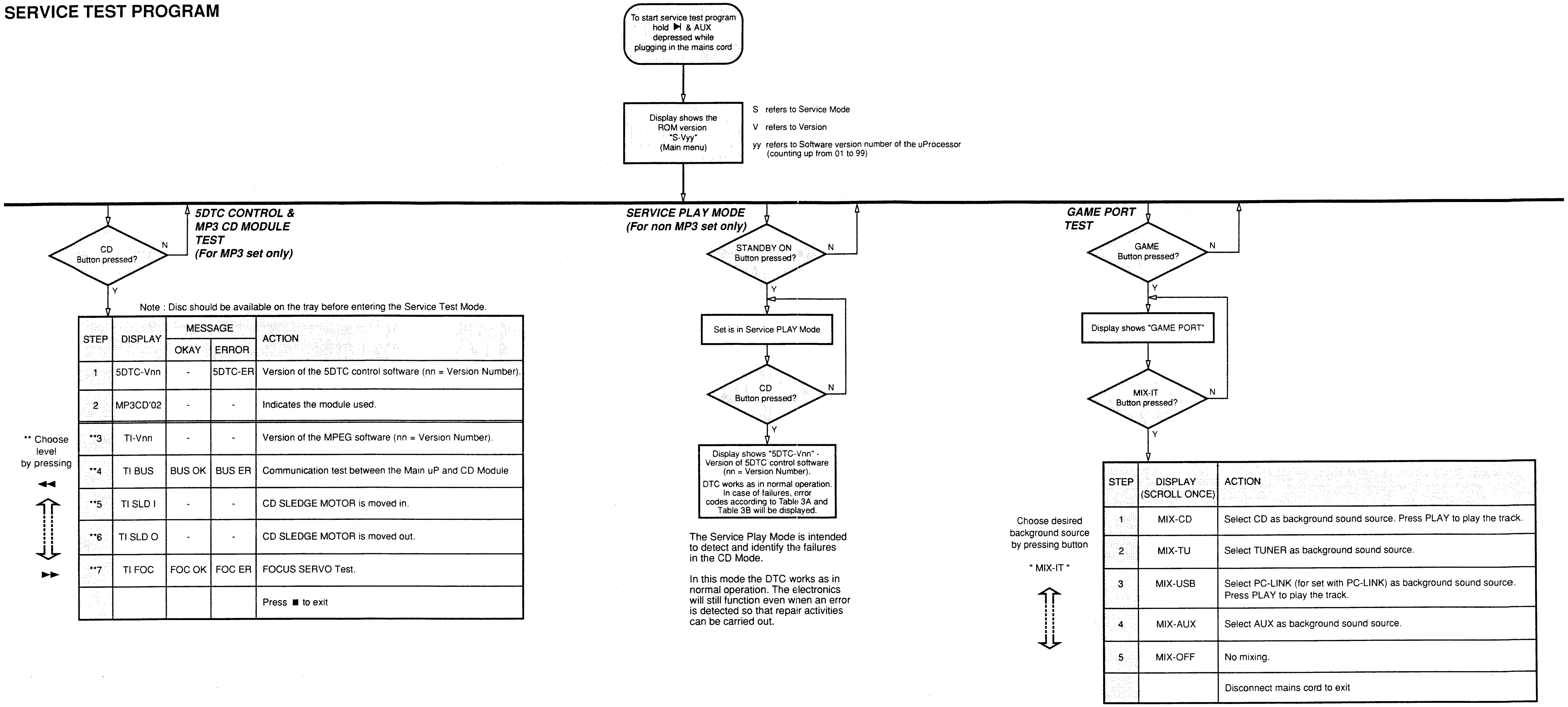
ADC Test is used for checking the ADC inputs to the microprocessor.

The display shows an ADC value between 0 and 255 for an input signal between 0 and 5V.


Various other Tests

TEST	*Activated with*	*ACTION*
EEPROM TEST	▶▶ ■ to Exit	A test pattern will be sent to the EEPROM. "PASS" is displayed if the uProcessor read back the test pattern correctly, otherwise "FAIL" will be displayed.
EEPROM FORMAT TEST	◀◀	Load default data. Display shows "NEW" for 1 second. ***Caution! All presets from the customer will be lost!!***
DEMO TOGGLE	^^ MAX (WOOX 2)	Pressing this button will toggle between DEMO ON and DEMO OFF. The DEMO status will scroll once across the Display.
ROTARY ENCODER TEST	Rotary Volume Knob	Display shows value for 2 seconds. Values increases or decreases until Volume Maximum (VOL MAX) or Volume Minimum (VOL MIN) is reached.
MICRONAS FIRMWARE VERSION	USB PC LINK ■ to Exit	To read out the Firmware Version of IC UAC3553 on the USB PC LINK Board. Display shows "Vxxxx" (xxxx = Firmware Version number).
LEAVE SERVICE TEST PROGRAM	Disconnect mains cord	

SERVICE TEST PROGRAM


To start service test program hold ⏯ & AUX depressed while plugging in the mains cord
Display shows the ROM version "S-Vyy" (Main menu)
5DTC CONTROL & MP3 CD MODULE TEST (For MP3 set only)
CD Button pressed?
N
Y
SERVICE PLAY MODE (For non MP3 set only)
STANDBY ON Button pressed?
N
Y
Set is in Service PLAY Mode
CD Button pressed?
N
Y
Display shows "5DTC-Vnn" - Version of 5DTC control software (nn = Version Number). DTC works as in normal operation. In case of failures, error codes according to Table 3A and Table 3B will be displayed.
GAME PORT TEST
GAME Button pressed?
N
Y
Display shows "GAME PORT"
MIX-IT Button pressed?
N
Y

S refers to Service Mode

V refers to Version

yy refers to Software version number of the uProcessor (counting up from 01 to 99)

5DTC CONTROL & MP3 CD MODULE TEST (For MP3 set only)

Note : Disc should be available on the tray before entering the Service Test Mode.

** Choose level by pressing ◀◀ ⇕ ▶▶

STEP	DISPLAY	MESSAGE		ACTION
		OKAY	ERROR	
1	5DTC-Vnn	-	5DTC-ER	Version of the 5DTC control software (nn = Version Number).
2	MP3CD'02	-	-	Indicates the module used.
**3	TI-Vnn	-	-	Version of the MPEG software (nn = Version Number).
**4	TI BUS	BUS OK	BUS ER	Communication test between the Main uP and CD Module
**5	TI SLD I	-	-	CD SLEDGE MOTOR is moved in.
**6	TI SLD O	-	-	CD SLEDGE MOTOR is moved out.
**7	TI FOC	FOC OK	FOC ER	FOCUS SERVO Test.
				Press ■ to exit

SERVICE PLAY MODE (For non MP3 set only)

The Service Play Mode is intended to detect and identify the failures in the CD Mode.

In this mode the DTC works as in normal operation. The electronics will still function even when an error is detected so that repair activities can be carried out.

GAME PORT TEST

Choose desired background source by pressing button " MIX-IT " ⇕

STEP	DISPLAY (SCROLL ONCE)	ACTION
1	MIX-CD	Select CD as background sound source. Press PLAY to play the track.
2	MIX-TU	Select TUNER as background sound source.
3	MIX-USB	Select PC-LINK (for set with PC-LINK) as background sound source. Press PLAY to play the track.
4	MIX-AUX	Select AUX as background sound source.
5	MIX-OFF	No mixing.
		Disconnect mains cord to exit

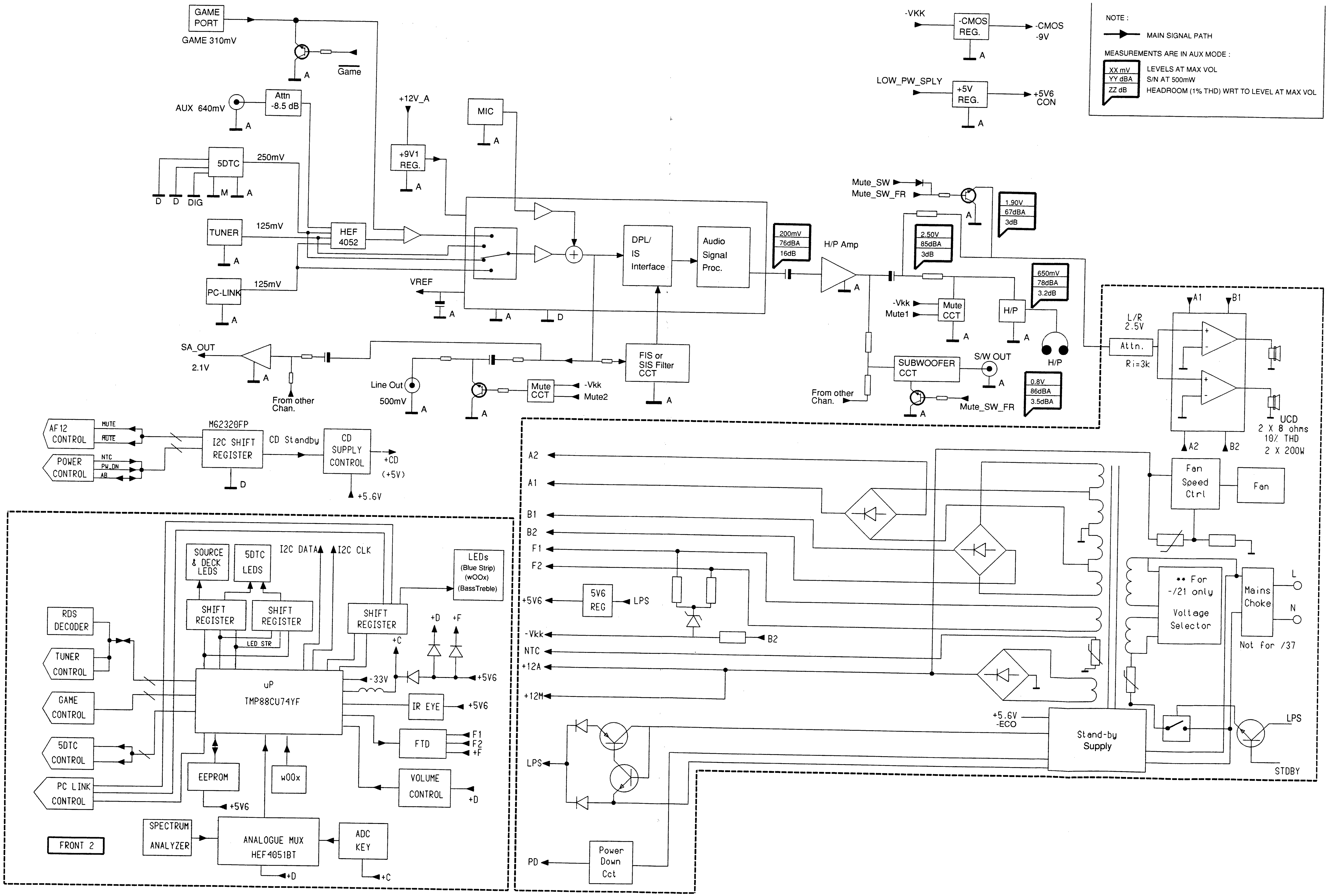
Error code	Error Description
E1000	Focus Error Triggered when the focus cannot be found within a certain time when starting up the CD, or if the focus is lost for more than a certain time during playing of CD.
E1001	Radial Error Triggered when the radial servo is off-track for a certain time during playing of CD.
E1002	Sledge In Error The sledge did not reach its inner position (inner-switch is still close) before approximately 6 seconds have passed by. Inner-switch or sledge motor problem.
E1003	Sledge Out Error The sledge did not come out of its inner position (inner-switch is still open) before approximately 250ms have passed by. Inner-switch or sledge motor problem.
E1005	Jump Error Triggered in normal play when the jump destination could not be found within a certain time.

Table 3A

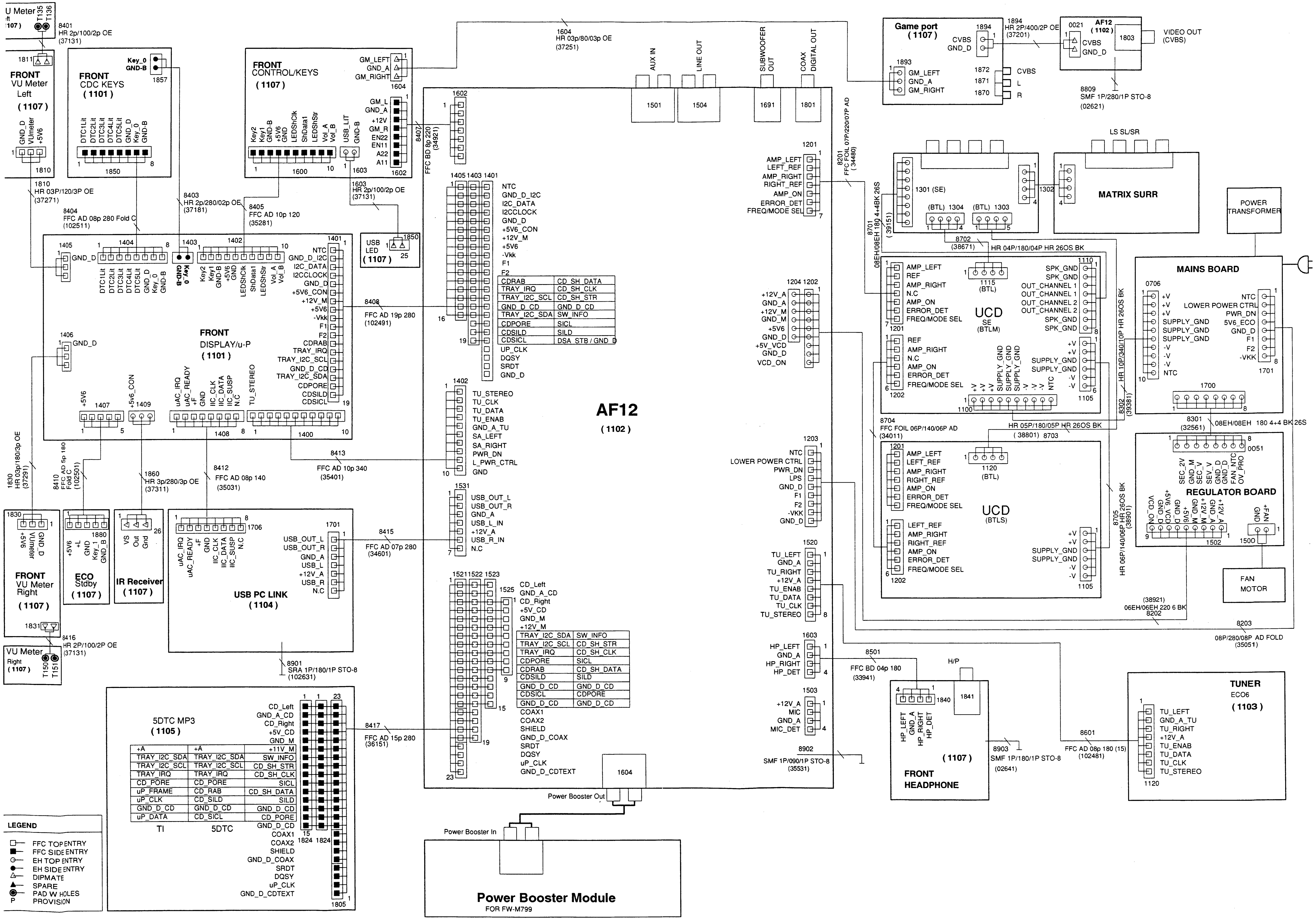
Error code	Error Description
E1006	Subcode Error Triggered when a new subcode was missing for a certain time during playing of CD.
E1007	PLL Error The Phase Lock Loop could not lock within a certain time.
E1008	Turntable Motor Error Generated when the CD could not reached 75% of speed during start-up within a certain time. Disc motor problem.
E1020	Focus Search Error The focus point has not been found within a certain time.
E1061	The tray could not enter the inside position and is opening again. This can happen if the tray is blocked such that it cannot go fully inside, or if the 5DTC control module is defective and never closes.
E1079	The tray could not reach the outside position and is stopped at its blocked position. This can happen if the tray is blocked such that it cannot go fully outside, or if the 5DTC control module is defective and never opens.

Table 3B

SET BLOCK DIAGRAM


GAME PORT
GAME 310mV
Game
AUX 640mV
Attn -8.5 dB
5DTC
250mV
D D DIG M A
TUNER
125mV
PC-LINK
125mV
HEF 4052
+12V_A
+9V1 REG.
MIC
VREF
DPL/ IS Interface
Audio Signal Proc.
FIS or SIS Filter CCT
SA_OUT
2.1V
From other Chan.
Line Out 500mV
Mute CCT
-Vkk
Mute2
-VKK
-CMOS REG.
-CMOS -9V
LOW_PW_SPLY
+5V REG.
+5V6 CON
NOTE :
MAIN SIGNAL PATH
MEASUREMENTS ARE IN AUX MODE :
XX mV
YY dBA
ZZ dB
LEVELS AT MAX VOL
S/N AT 500mW
HEADROOM (1% THD) WRT TO LEVEL AT MAX VOL
Mute_SW
Mute_SW_FR
1.90V 67dBA 3dB
200mV 76dBA 16dB
H/P Amp
2.50V 85dBA 3dB
650mV 78dBA 3.2dB
-Vkk
Mute1
Mute CCT
H/P
H/P
SUBWOOFER CCT
S/W OUT
0.8V 86dBA 3.5dBA
Mute_SW_FR
From other Chan.
L/R 2.5V
Attn.
Ri=3k
A1 B1
A2 B2
UCD 2 X 8 ohms 10% THD 2 X 200W
AF12 CONTROL
MUTE
MUTE
POWER CONTROL
NTC
PW_DN
AB
M62320FP
I2C SHIFT REGISTER
CD Standby
CD SUPPLY CONTROL
+CD (+5V)
+5.6V
SOURCE & DECK LEDS
5DTC LEDS
I2C DATA
I2C CLK
LEDs (Blue Strip) (wOOx) (BassTreble)
SHIFT REGISTER
SHIFT REGISTER
LED STR
SHIFT REGISTER
+D +F
+C
RDS DECODER
TUNER CONTROL
GAME CONTROL
5DTC CONTROL
PC LINK CONTROL
uP TMP88CU74YF
-33V
+5V6
IR EYE
+5V6
FTD
F1 F2 +F
EEPROM
+5V6
w00x
VOLUME CONTROL
+D
SPECTRUM ANALYZER
ANALOGUE MUX HEF4051BT
ADC KEY
+D
+C
FRONT 2
A2
A1
B1
B2
F1
F2
+5V6
5V6 REG
LPS
-Vkk
B2
NTC
+12A
+12M
Fan Speed Ctrl
Fan
•• For -/21 only Voltage Selector
Mains Choke
L
N
Not for /37
+5.6V -ECO
Stand-by Supply
LPS
STDBY
LPS
PD
Power Down Cct

ET WIRING DIAGRAM


FRONT VU Meter Left (1107)
FRONT CDC KEYS (1101)
FRONT CONTROL/KEYS (1107)
USB LED (1107)
FRONT DISPLAY/u-P (1101)
FRONT VU Meter Right (1107)
ECO Stdby (1107)
IR Receiver (1107)
USB PC LINK (1104)
5DTC MP3 (1105)
AF12 (1102)
AUX IN
LINE OUT
SUBWOOFER OUT
COAX DIGITAL OUT
Game port (1107)
AF12 (1102)
VIDEO OUT (CVBS)
LS SL/SR
MATRIX SURR
POWER TRANSFORMER
MAINS BOARD
UCD SE (BTLM)
UCD (BTLS)
REGULATOR BOARD
FAN MOTOR
TUNER ECO6 (1103)
FRONT HEADPHONE (1107)
H/P
Power Booster Out
Power Booster In
Power Booster Module
FOR FW-M799
8401 HR 2p/100/2p OE (37131)
1810 HR 03P/120/3P OE (37271)
8404 FFC AD 08p 280 Fold C (102511)
8403 HR 2p/280/02p OE (37181)
8405 FFC AD 10p 120 (35281)
1603 HR 2p/100/2p OE (37131)
1604 HR 03p/80/03p OE (37251)
8407 FFC BD 8p 220 (34921)
8408 FFC AD 19p 280 (102491)
8413 FFC AD 10p 340 (35401)
8412 FFC AD 08p 140 (35031)
1860 HR 3p/280/3p OE (37311)
8410 FFC AD 5p 180 Fold C (102501)
1830 HR 03p/180/3p OE (37291)
8416 HR 2P/100/2P OE (37131)
8415 FFC AD 07p 280 (34601)
8901 SRA 1P/180/1P STO-8 (102631)
8417 FFC AD 15p 280 (36151)
8201 FFC FOIL 07P/220/07P AD (34480)
8701 08EH/08EH 180 4+4BK 26S (39151)
8702 (38671) HR 04P/180/04P HR 26OS BK
8704 FFC FOIL 06P/140/06P AD (34011)
HR 05P/180/05P HR 26OS BK (38801) 8703
8302 HR 10P/340/10P HR 26OS BK (39381)
8301 (32561) 08EH/08EH 180 4+4 BK 26S
8705 HR 06P/140/06P HR 26OS BK (38901)
(38921) 06EH/06EH 220 6 BK 8202
8203 08P/280/08P AD FOLD (35051)
8501 FFC BD 04p 180 (33941)
8601 FFC AD 08p 180 (15) (102481)
8902 SMF 1P/090/1P STO-8 (35531)
8903 SMF 1P/180/1P STO-8 (02641)
1894 HR 2P/400/2P OE (37201)
8809 SMF 1P/280/1P STO-8 (02621)
1405 1403 1401: NTC, GND_D_I2C, I2C_DATA, I2CCLOCK, GND_D, +5V6_CON, +12V_M, +5V6, -Vkk, F1, F2
CDRAB | CD_SH_DATA
TRAY_IRQ | CD_SH_CLK
TRAY_I2C_SCL | CD_SH_STR
GND_D_CD | GND_D_CD
TRAY_I2C_SDA | SW_INFO
CDPORE | SICL
CDSILD | SILD
CDSICL | DSA_STB / GND_D
UP_CLK, DQSY, SRDT, GND_D
1402: TU_STEREO, TU_CLK, TU_DATA, TU_ENAB, GND_A_TU, SA_LEFT, SA_RIGHT, PWR_DN, L_PWR_CTRL, GND
1531: USB_OUT_L, USB_OUT_R, GND_A, USB_L_IN, +12V_A, USB_R_IN, N.C
1521 1522 1523 1525: CD_Left, GND_A_CD, CD_Right, +5V_CD, GND_M, +12V_M
TRAY_I2C_SDA | SW_INFO
TRAY_I2C_SCL | CD_SH_STR
TRAY_IRQ | CD_SH_CLK
CDPORE | SICL
CDRAB | CD_SH_DATA
CDSILD | SILD
GND_D_CD | GND_D_CD
CDSICL | CDPORE
GND_D_CD | GND_D_CD
COAX1, COAX2, SHIELD, GND_D_COAX, SRDT, DQSY, uP_CLK, GND_D_CDTEXT
1201: AMP_LEFT, LEFT_REF, AMP_RIGHT, RIGHT_REF, AMP_ON, ERROR_DET, FREQ/MODE SEL
1204 1202: +12V_A, GND_A, +12V_M, GND_M, +5V6, GND_D, +5V_VCD, GND_D, VCD_ON
1203: NTC, LOWER POWER CTRL, PWR_DN, LPS, GND_D, F1, F2, -VKK, GND_D
1520: TU_LEFT, GND_A, TU_RIGHT, +12V_A, TU_ENAB, TU_DATA, TU_CLK, TU_STEREO
1603: HP_LEFT, GND_A, HP_RIGHT, HP_DET
1503: +12V_A, MIC, GND_A, MIC_DET
1501 1504 1691 1801 1604
5DTC MP3 table: +A | +A | SW_INFO; TRAY_I2C_SDA | TRAY_I2C_SDA | CD_SH_STR; TRAY_I2C_SCL | TRAY_I2C_SCL | CD_SH_CLK; TRAY_IRQ | TRAY_IRQ | SICL; CD_PORE | CD_PORE | CD_SH_DATA; uP_FRAME | CD_RAB | SILD; uP_CLK | CD_SILD | GND_D_CD; GND_D_CD | GND_D_CD | CD_PORE; uP_DATA | CD_SICL | GND_D_CD
TI 5DTC
CD_Left, GND_A_CD, CD_Right, +5V_CD, GND_M, +11V_M, COAX1, COAX2, SHIELD, GND_D_COAX, SRDT, DQSY, uP_CLK, GND_D_CDTEXT
1824 1824 1805
MAINS BOARD 0706: +V, +V, +V, SUPPLY_GND, SUPPLY_GND, SUPPLY_GND, -V, -V, -V, NTC
1701: NTC, LOWER POWER CTRL, PWR_DN, 5V6_ECO, GND_D, F1, F2, -VKK
1700, 0051, 1502, 1500
REGULATOR BOARD: SEC_2V, GND_M, SEC_V, SEV_V, GND_D, FAN_NTC, OV_PRO, VCD_ON, GND_D, +5V_VCD, +5V6, GND_M, +12V_M, GND_A, +12V_A, +FAN, GND
UCD: AMP_LEFT, REF, AMP_RIGHT, N.C, AMP_ON, ERROR_DET, FREQ/MODE SEL, SPK_GND, OUT_CHANNEL 1, OUT_CHANNEL 2, +V, -V, SUPPLY_GND, 1110, 1115 (BTL), 1120 (BTL), 1100, 1105, 1201, 1202
Game port: CVBS, GND_D, GM_LEFT, GND_A, GM_RIGHT, 1893, 1872 CVBS, 1871 L, 1870 R, 0021, 1803
1301 (SE), (BTL) 1304, (BTL) 1303, 1302
TUNER 1120: TU_LEFT, GND_A_TU, TU_RIGHT, +12V_A, TU_ENAB, TU_DATA, TU_CLK, TU_STEREO
HEADPHONE 1840, 1841: HP_LEFT, GND_A, HP_RIGHT, HP_DET
VU Meter Right (1107) T150 T151
U Meter (1107) T135 T136
LEGEND
FFC TOP ENTRY
FFC SIDE ENTRY
EH TOP ENTRY
EH SIDE ENTRY
DIPMATE
SPARE
PAD W HOLES
P PROVISION

FRONT CONTROL BOARD

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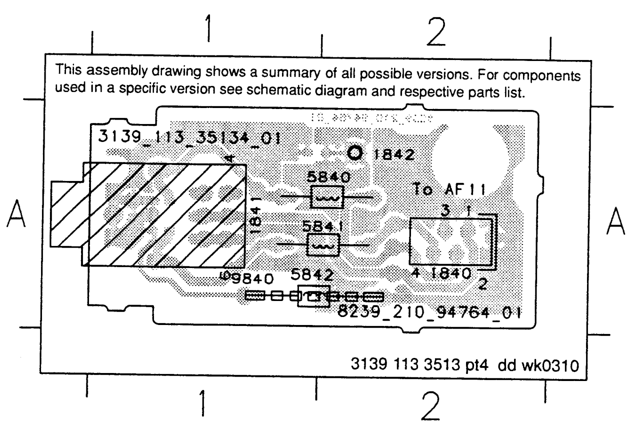
HEADPHONE BOARD - COMPONENT LAYOUT

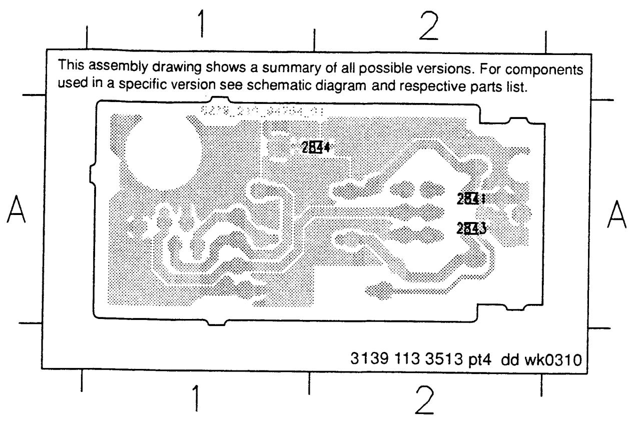
1840 A2
1841 A1
1842 A2
5840 A2
5841 A2
5842 A1
9840 A1



1
2
A
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139_113_35134_01
1842
5840
5841
1841
To AF11
3 1
4 1840 2
9840
5842
8239_210_94764_01
3139 113 3513 pt4 dd wk0310

HEADPHONE BOARD - CHIP LAYOUT

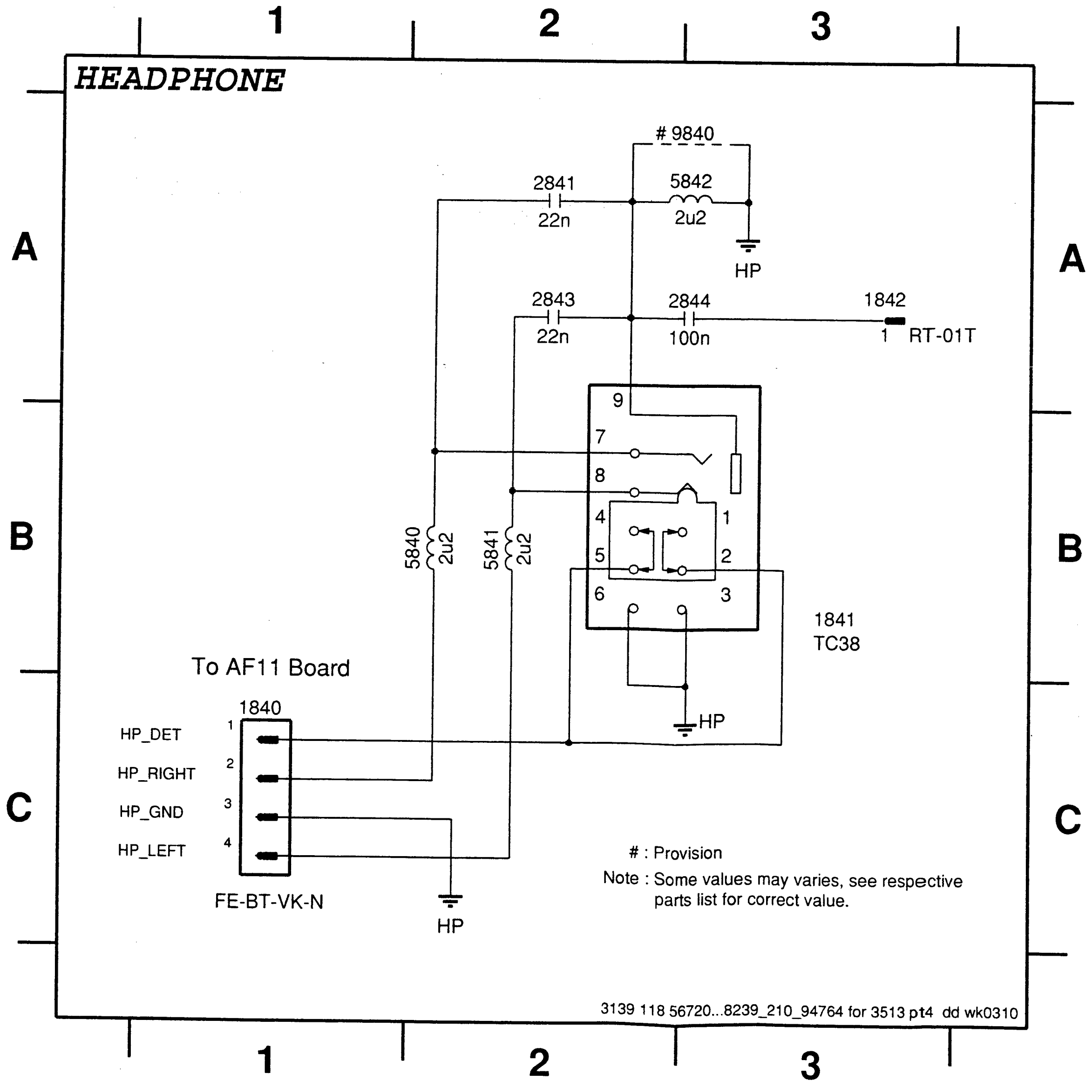
2841 A2
2843 A2
2844 A2



1
2
A
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
2844
2841
2843
3139 113 3513 pt4 dd wk0310

HEADPHONE BOARD - CIRCUIT DIAGRAM

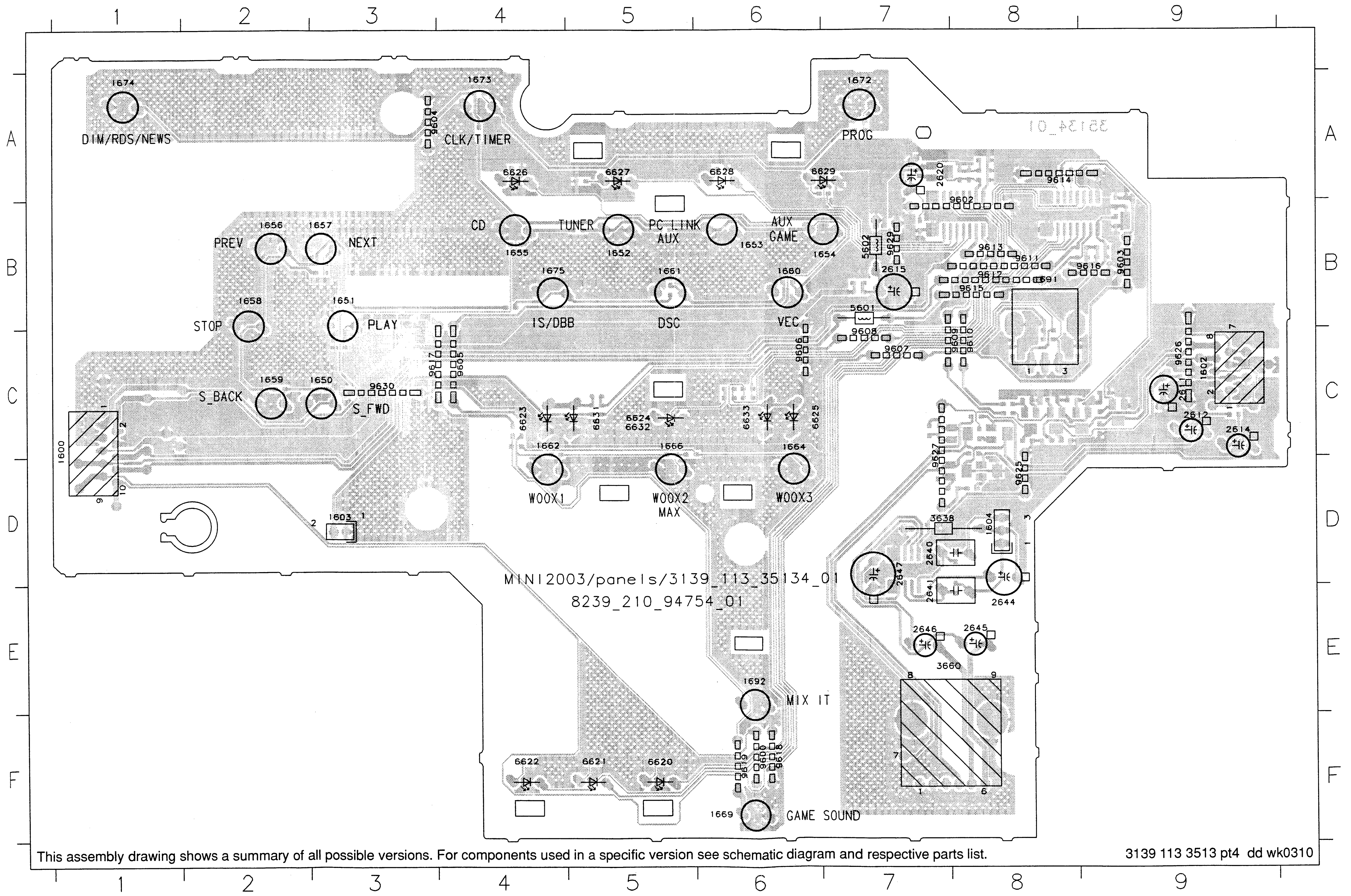
1840 C1 1841 B3 1842 A3 2841 A2 2843 A2 2844 A3 5840 B2 5841 B2 5842 A3 9840 A3



1
2
3
A
B
C
HEADPHONE
# 9840
2841
22n
5842
2u2
HP
2843
22n
2844
100n
1842
1 RT-01T
9
7
8
4
5
6
1
2
3
1841
TC38
5840
2u2
5841
2u2
To AF11 Board
1840
HP_DET
HP_RIGHT
HP_GND
HP_LEFT
FE-BT-VK-N
HP
# : Provision
Note : Some values may varies, see respective parts list for correct value.
3139 118 56720...8239_210_94764 for 3513 pt4 dd wk0310

ONTROL BOARD - COMPONENT LAYOUT

1600	C1
1602	C9
1603	D3
1604	D8
1650	C3
1651	B3
1652	B5
1653	B6
1654	B7
1655	B4
1656	B2
1657	B3
1658	B2
1659	C2
1660	B6
1661	B5
1662	C4
1664	C6
1666	C5
1669	F6
1672	A7
1673	A4
1674	A1
1675	B4
1691	B8
1692	E6
2611	C9
2612	C9
2614	C9
2615	B7
2620	A7
2640	D7
2641	E7
2644	E8
2645	E8
2646	E7
2647	D7
3638	D7
3660	E7
5601	B7
5602	B7
6620	F5
6621	F5
6622	F4
6623	C4
6624	C5
6625	C6
6626	A4
6627	A5
6628	A6
6629	A7
6631	C5
6632	C5
6633	C6
9600	F6
9602	B8
9603	B9
9604	A3
9605	C4
9606	C6
9607	C7
9608	C7
9609	C8
9610	C8
9611	B8
9612	B8
9613	B8
9614	A8
9615	B8
9616	B9
9617	C3
9618	F6
9619	F6
9625	D8
9626	C9
9627	C7
9629	B7
9630	C3


1 2 3 4 5 6 7 8 9
A B C D E F
1674 DIM/RDS/NEWS
1673 CLK/TIMER
1672 PROG
35134_01
6626 6627 6628 6629
2620 9614 9602
1656 PREV 1657 NEXT
CD 1655
TUNER 1652
PC LINK AUX 1653
AUX GAME 1654
5602 9629 2615
9613 9611 9612 9616 9603 9615 1691
1675 IS/DBB
1661 DSC
1660 VEC
1658 STOP
1651 PLAY
5601 9608 9607 9609 9610 9606
9617 9605
1659 S_BACK
1650 S_FWD 9630
1600
6623 6631 6624 6632 6633 6625
9626 1602 2611 2612 2614
1662 WOOX1
1666 WOOX2 MAX
1664 WOOX3
9627 9625
1603
3638 1604
2640 2647 2641 2644
MINI2003/panels/3139_113_35134_01
8239_210_94754_01
2646 2645 3660
1692 MIX IT
9619 9600 9618
6622 6621 6620
1669 GAME SOUND

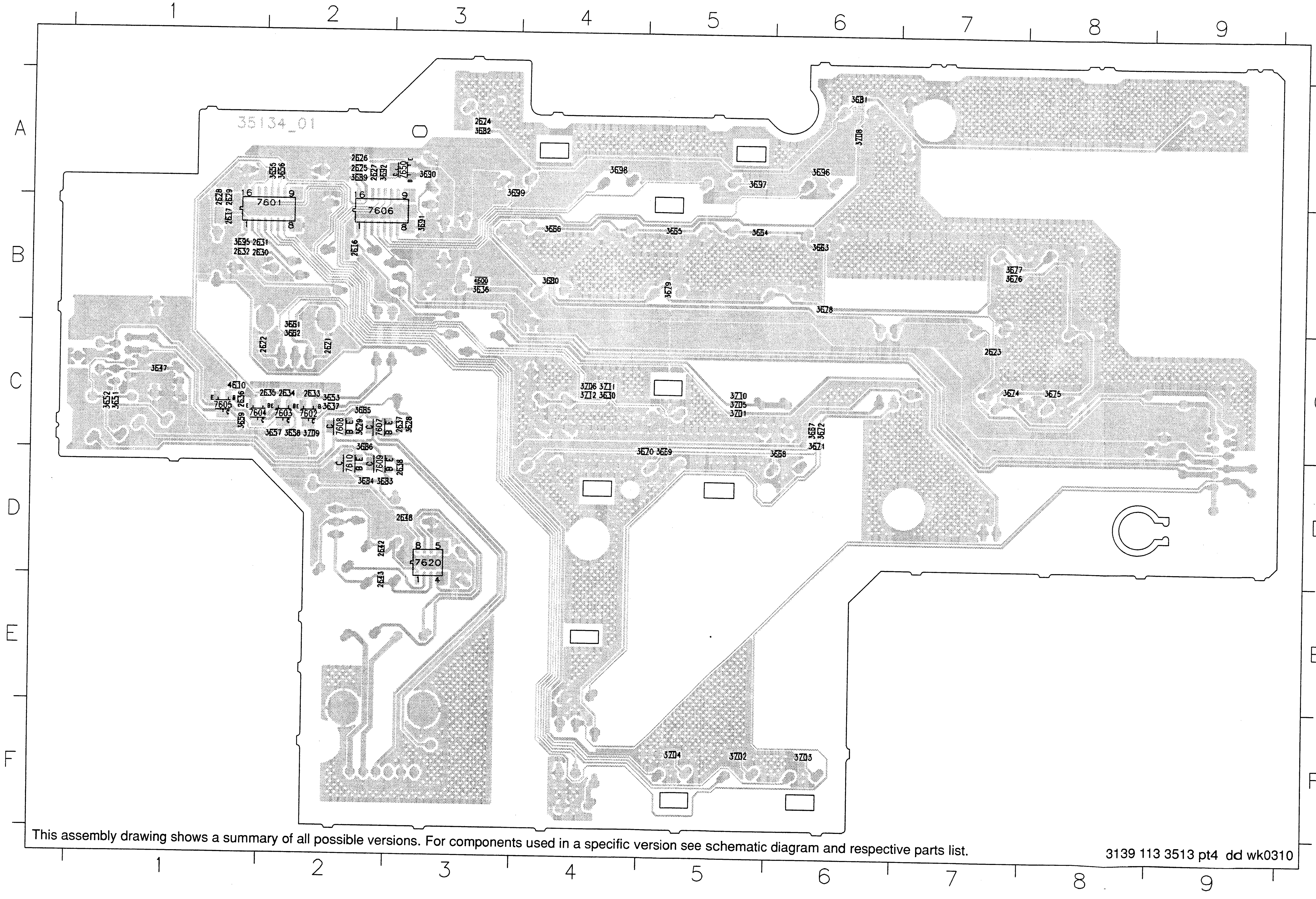
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

CONTROL BOARD - CHIP LAYOUT

2616	B2	2625	A2	2631	B1	2637	C3	3629	C2	3652	C1	3659	C1	3666	B4
2617	B1	2626	A2	2632	B1	2638	D3	3630	C4	3653	C2	3661	C2	3667	C6
2621	C2	2627	A2	2633	C2	2642	D2	3636	B3	3655	A2	3662	C2	3668	C6
2622	C1	2628	B1	2634	C2	2643	E2	3637	C2	3656	A2	3663	B6	3669	C5
2623	C7	2629	B1	2635	C2	2648	D3	3647	C1	3657	C2	3664	B5	3670	C5
2624	A3	2630	B1	2636	C1	3628	C3	3651	C1	3658	C2	3665	B5	3671	C6

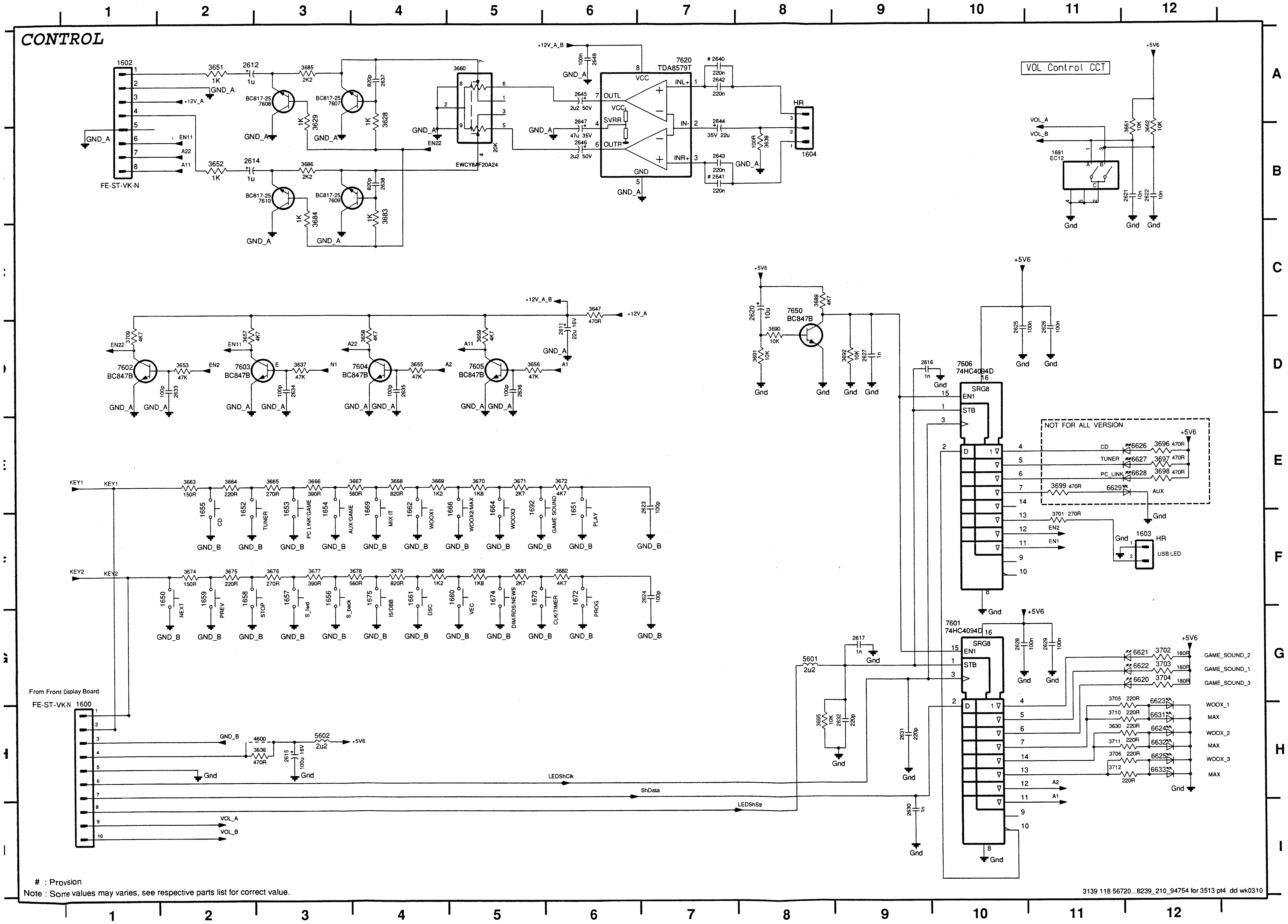
3672	C6	3679	B5	3685	C2	3695	B1	3702	F5	3709	C2	7601	B2	7607	C2
3674	C7	3680	B4	3686	C2	3696	A6	3703	F6	3710	C5	7602	C2	7608	C2
3675	C8	3681	A6	3689	A2	3697	A5	3704	F5	3711	C4	7603	C2	7609	D2
3676	B7	3682	A3	3690	A3	3698	A4	3705	C5	3712	C4	7604	C1	7610	D2
3677	B7	3683	D2	3691	B3	3699	A3	3706	C4	4600	B3	7605	C1	7620	D3
3678	B6	3684	D2	3692	A2	3701	C5	3708	A6	4610	C1	7606	B2	7650	A3



This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

ONTROL BOARD - CIRCUIT DIAGRAM


CONTROL
1602
FE-ST-VK-N
GND_A
+12V_A
EN11
A22
A11
3651 1K
3652 1K
2612 1u
2614 1u
3685 2K2
3686 2K2
BC817-25 7608
BC817-25 7607
BC817-25 7610
BC817-25 7609
3629 1K
3628 1K
3684 1K
3683 1K
2637 820p
2638 820p
3660
EWCY8AF20A24
EN22
20K
+12V_A_B
2648 100n
7620
TDA8579T
VCC
OUTL
VCC
SVRR
OUTR
GND
INL+
IN-
INR+
2645 2u2 50V
2647 47u 35V
2646 2u2 50V
# 2640 220n
2642 220n
2643 220n
# 2641 220n
2644 35V 22u
3638 100R
HR
1604
VOL Control CCT
+5V6
VOL_A
VOL_B
1691
EC12
3661 10K
3662 10K
2621 1n
2622 1n
Gnd
3647 470R
2611 22u 16V
3709 4K7
3657 4K7
3658 4K7
3659 4K7
7602 BC847B
7603 BC847B
7604 BC847B
7605 BC847B
3653 47K
3637 47K
3655 47K
3656 47K
EN2
N1
A2
A1
2633 100p
2634 100p
2635 100p
2636 100p
2620 10u
3689 4K7
3690 10K
7650 BC847B
3691 10K
3692 10K
2627 1n
2625 100n
2626 100n
2616 1n
7606
74HC4094D
SRG8
EN1
STB
D
NOT FOR ALL VERSION
CD
TUNER
PC_LINK
AUX
6626
6627
6628
6629
3696 470R
3697 470R
3698 470R
3699 470R
3701 270R
1603
USB LED
KEY1
KEY2
3663 150R
3664 220R
3665 270R
3666 390R
3667 560R
3668 820R
3669 1K2
3670 1K8
3671 2K7
3672 4K7
1655 CD
1652 TUNER
1653 PC LINK/GAME
1654 AUX/GAME
1669 MIX IT
1662 WOOX1
1666 WOOX2/MAX
1664 WOOX3
1692 GAME SOUND
1651 PLAY
2623 100p
GND_B
3674 150R
3675 220R
3676 270R
3677 390R
3678 560R
3679 820R
3680 1K2
3708 1K8
3681 2K7
3682 4K7
1650 NEXT
1659 PREV
1658 STOP
1657 S_fwd
1656 S_back
1675 IS/DBB
1661 DSC
1660 VEC
1674 DIM/RDS/NEWS
1673 CLK/TIMER
1672 PROG
2624 100p
7601
74HC4094D
2617 1n
5601 2u2
3695 10K
2632 220p
2631 220p
2630 1n
2628 100n
2629 100n
6621 3702 180R
6622 3703 180R
6620 3704 180R
GAME_SOUND_2
GAME_SOUND_1
GAME_SOUND_3
3705 220R 6623
3710 220R 6631
3630 220R 6624
3711 220R 6632
3706 220R 6625
3712 220R 6633
WOOX_1
MAX
WOOX_2
MAX
WOOX_3
MAX
From Front Display Board
FE-ST-VK-N 1600
GND_B
4600
3636 470R
5602 2u2
2615 100u 16V
LEDShClk
ShData
LEDShStr
VOL_A
VOL_B
1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I

: Provision

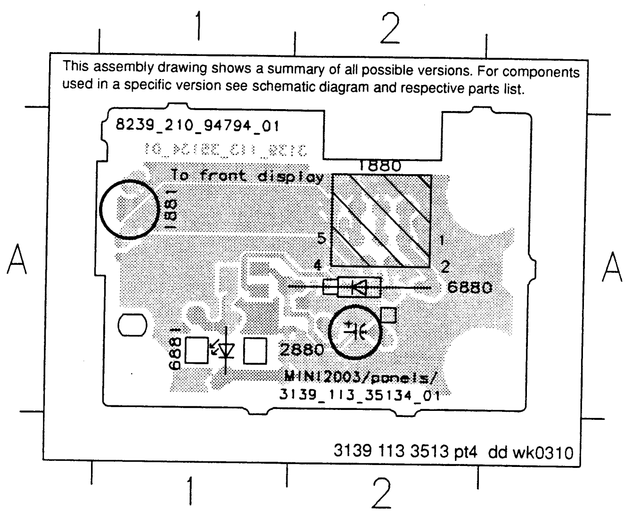
Note : Some values may varies, see respective parts list for correct value.

3139 118 56720...8239_210_94754 for 3513 pt4 dd wk0310

1600	H1
1602	A1
1603	F12
1604	B8
1650	F2
1651	E6
1652	E2
1653	E3
1654	F3
1655	F2
1656	F3
1657	F3
1658	F2
1659	F2
1660	F5
1661	F4
1662	E4
1664	F5
1666	F5
1669	E4
1672	F6
1673	F5
1674	F5
1675	F4
1691	B11
1692	E5
2611	D6
2612	A2
2614	B2
2615	H3
2616	D9
2617	G9
2620	C8
2621	B12
2622	B12
2623	E7
2624	F7
2625	D10
2626	D11
2627	D9
2628	G10
2629	G11
2630	I9
2631	H9
2632	H9
2633	D2
2634	D3
2635	D4
2636	D5
2637	A4
2638	B4
2640	A7
2641	B7
2642	A7
2643	B7
2644	A7
2645	A6
2646	B6
2647	A6
2648	A6
3628	A4
3629	A3
3630	H11
3636	H3
3637	D3
3638	B8
3647	C6
3651	A2
3652	B2
3653	D2
3655	D4
3656	D5
3657	D2
3658	D4
3659	D5
3660	A5
3661	B12
3662	B12
3663	E2
3664	E2
3665	E3
3666	E3
3667	E4
3668	E4
3669	E4
3670	E5
3671	E5
3672	E6
3674	F2
3675	F2
3676	F3
3677	F3
3678	F4
3679	F4
3680	F4
3681	F5
3682	F6
3683	B4
3684	B3
3685	A3
3686	B3
3689	C8
3690	D8
3691	D8
3692	D9
3695	H8
3696	E12
3697	E12
3698	E12
3699	E11
3701	F11
3702	G12
3703	G12
3704	G12
3705	G11
3706	H11
3708	F5
3709	D1
3710	H11
3711	H11
3712	H11
4600	H3
5601	G8
5602	H3
6620	G12
6621	G12
6622	G12
6623	H12
6624	H12
6625	H12
6626	E12
6627	E12
6628	E12
6629	E11
6631	H12
6632	H12
6633	H12
7601	G10
7602	D1
7603	D2
7604	D4
7605	D5
7606	D10
7607	A3
7608	A3
7609	B3
7610	B3
7620	A7
7650	C8

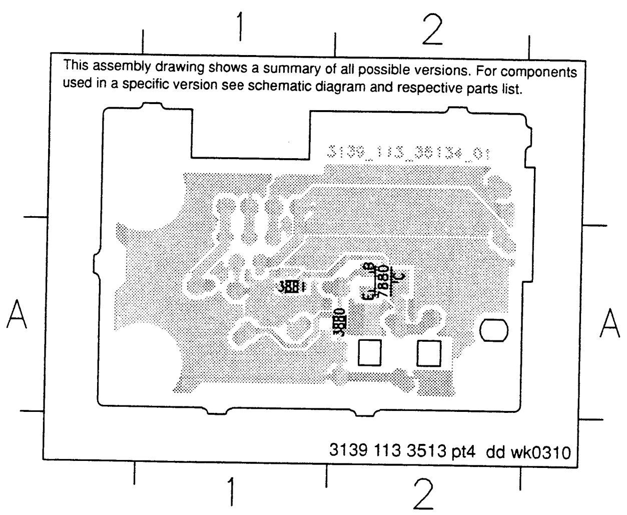
ECO POWER BOARD - COMPONENT LAYOUT

1880	A2
1881	A1
2880	A2
6880	A2
6881	A1


1
2
A
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_94794_01
To front display
1880
1881
5
4
1
2
6880
6881
2880
MINI2003/panels/
3139_113_35134_01
3139 113 3513 pt4 dd wk0310

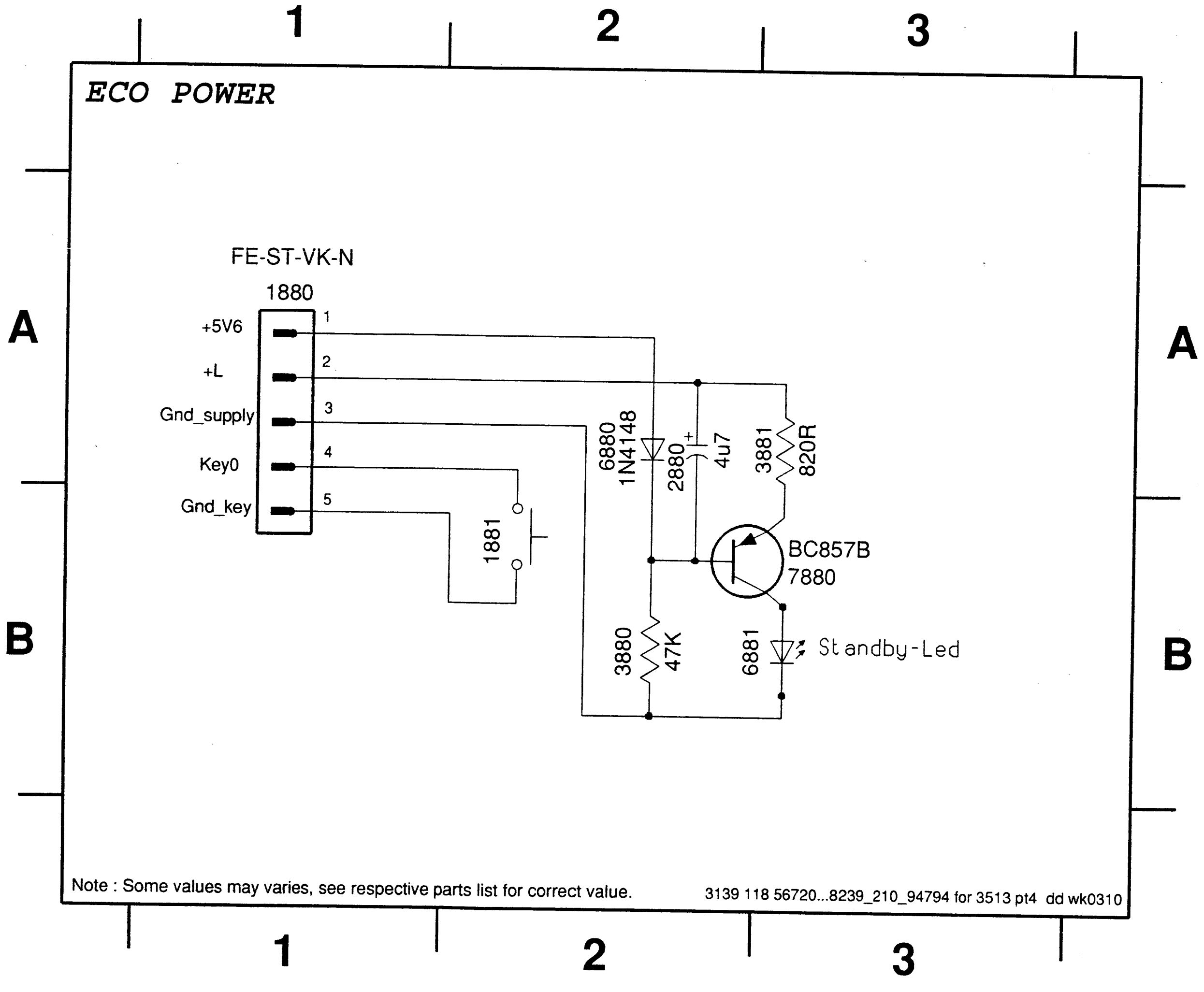
ECO POWER BOARD - CHIP LAYOUT

3880	A2
3881	A1
7880	A2


1
2
A
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
3139_113_35134_01
3881
3880
7880
3139 113 3513 pt4 dd wk0310

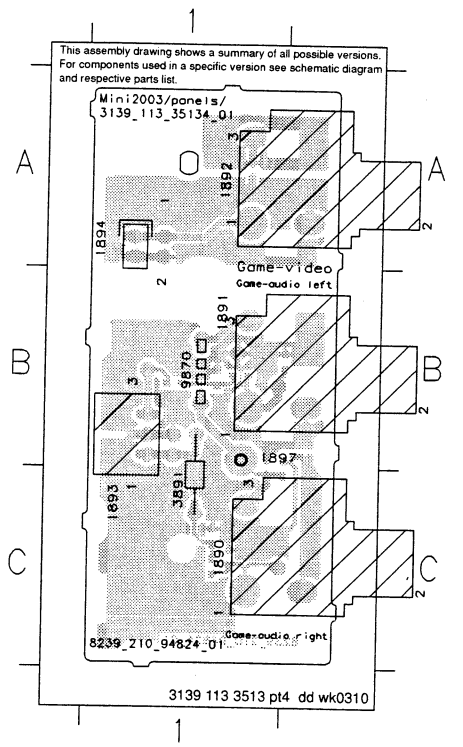
ECO POWER BOARD - CIRCUIT DIAGRAM

1880	A1
1881	B2
2880	A2
3880	B2
3881	A3
6880	A2
6881	B2
7880	B3


1
2
3
A
B
ECO POWER
FE-ST-VK-N
1880
+5V6
+L
Gnd_supply
Key0
Gnd_key
1
2
3
4
5
6880
1N4148
2880
4u7
3881
820R
BC857B
7880
1881
3880
47K
6881
Standby-Led
Note : Some values may varies, see respective parts list for correct value.
3139 118 56720...8239_210_94794 for 3513 pt4 dd wk0310

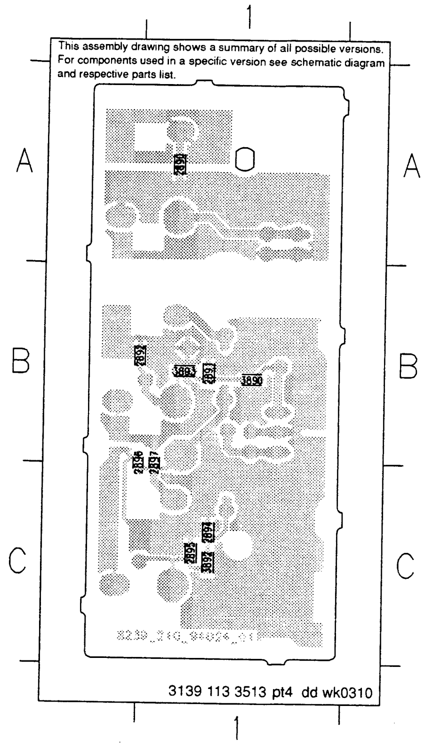
GAME PORT BOARD - COMPONENT LAYOUT

1890	C1
1891	B1
1892	A1
1893	C1
1894	A1
1897	B1
3891	C1
9870	B1


1
A
B
C
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
Mini2003/panels/
3139_113_35134_01
1892
1894
Game-video
Game-audio left
1891
9870
1897
3891
1893
1890
Game-audio right
8239_210_94824_01
3139 113 3513 pt4 dd wk0310

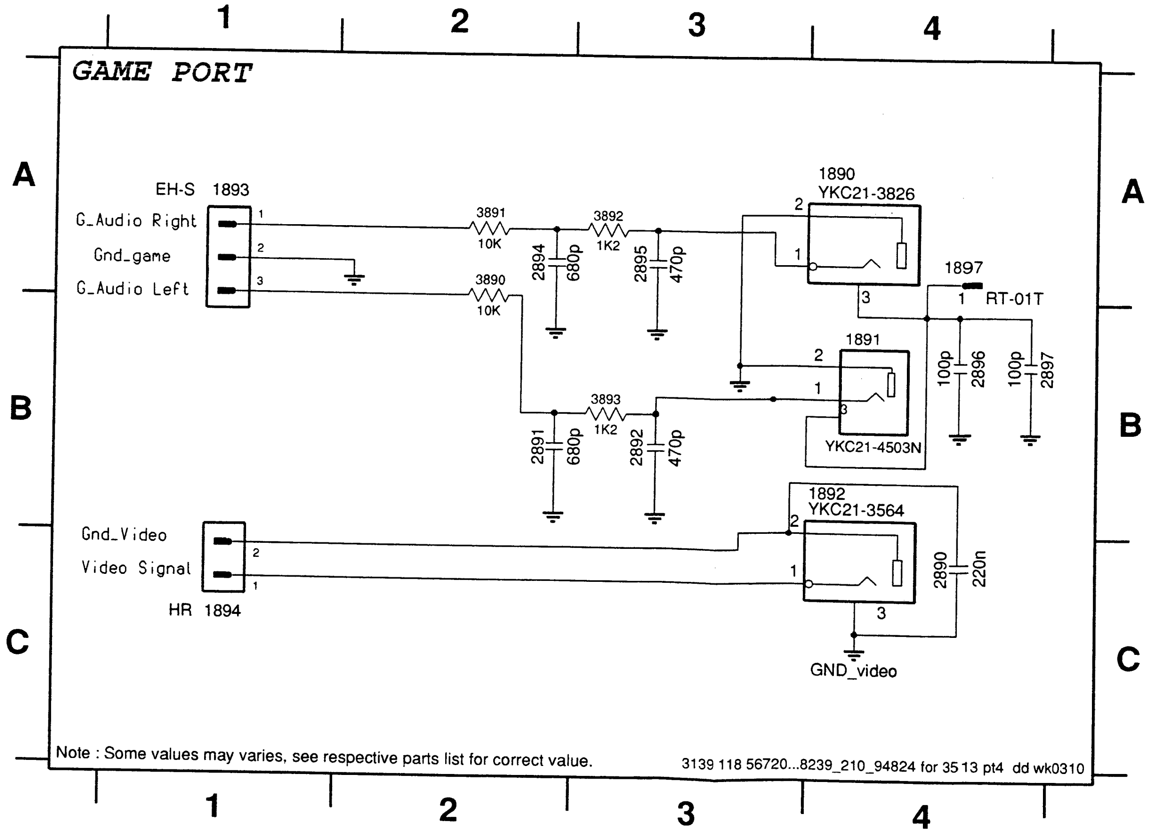
GAME PORT BOARD - CHIP LAYOUT

2890	A1
2891	B1
2892	B1
2894	C1
2895	C1
2896	B1
2897	B1
3890	B1
3892	C1
3893	B1


1
A
B
C
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.
8239_210_94824_01
3139 113 3513 pt4 dd wk0310

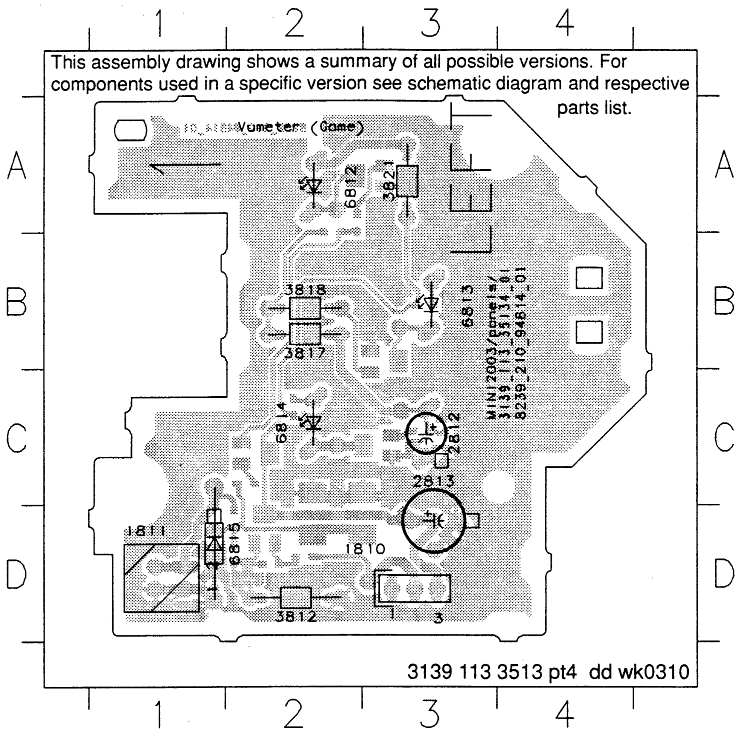
GAME PORT BOARD - CIRCUIT DIAGRAM

1890	A3
1891	B4
1892	B3
1893	A1
1894	C1
1897	A4
2890	C4
2891	B2
2892	B3
2894	A2
2895	A3
2896	B4
2897	B4
3890	A2
3891	A2
3892	A3
3893	B3


1
2
3
4
A
B
C
GAME PORT
EH-S 1893
G_Audio Right
Gnd_game
G_Audio Left
3891
10K
3890
10K
2894
680p
3892
1K2
2895
470p
1890
YKC21-3826
1897
RT-01T
1891
YKC21-4503N
100p
2896
100p
2897
3893
1K2
2891
680p
2892
470p
1892
YKC21-3564
Gnd_Video
Video Signal
HR 1894
2890
220n
GND_video
Note : Some values may varies, see respective parts list for correct value.
3139 118 56720...8239_210_94824 for 3513 pt4 dd wk0310

U METER (LEFT) BOARD - COMPONENT LAYOUT

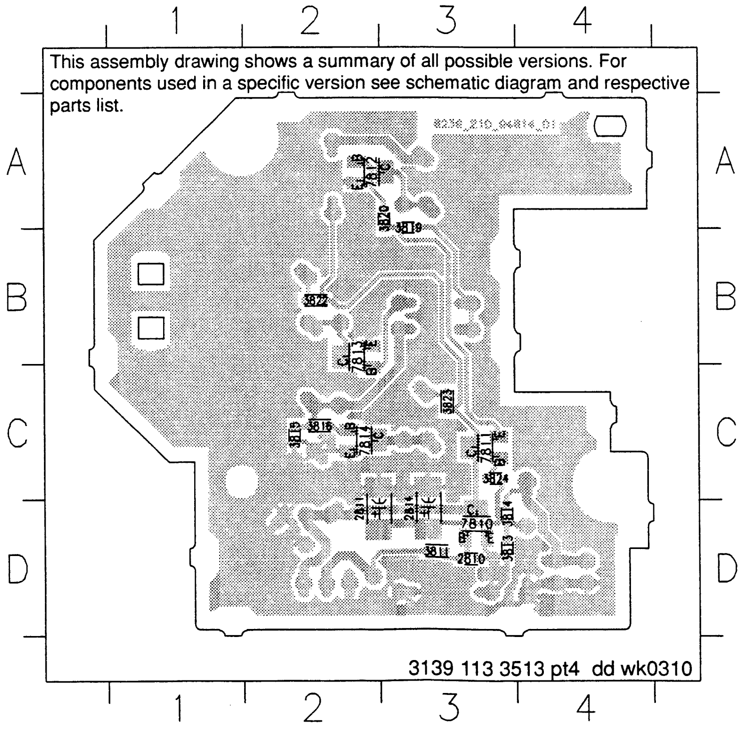
1810	D3	2813	C3	3818	B2	6813	B3
1811	D1	3812	D2	3821	A3	6814	C2
2812	C3	3817	B2	6812	A2	6815	D2


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

1
2
3
4
A
B
C
D
Vumeter (Gome)
6812
3821
3818
3817
6813
MINI2003/panels/
3139_113_35134_01
8239_210_94814_01
6814
2812
2813
1811
6815
1810
3812
1
3
3139 113 3513 pt4 dd wk0310

U METER (LEFT) BOARD - CHIP LAYOUT

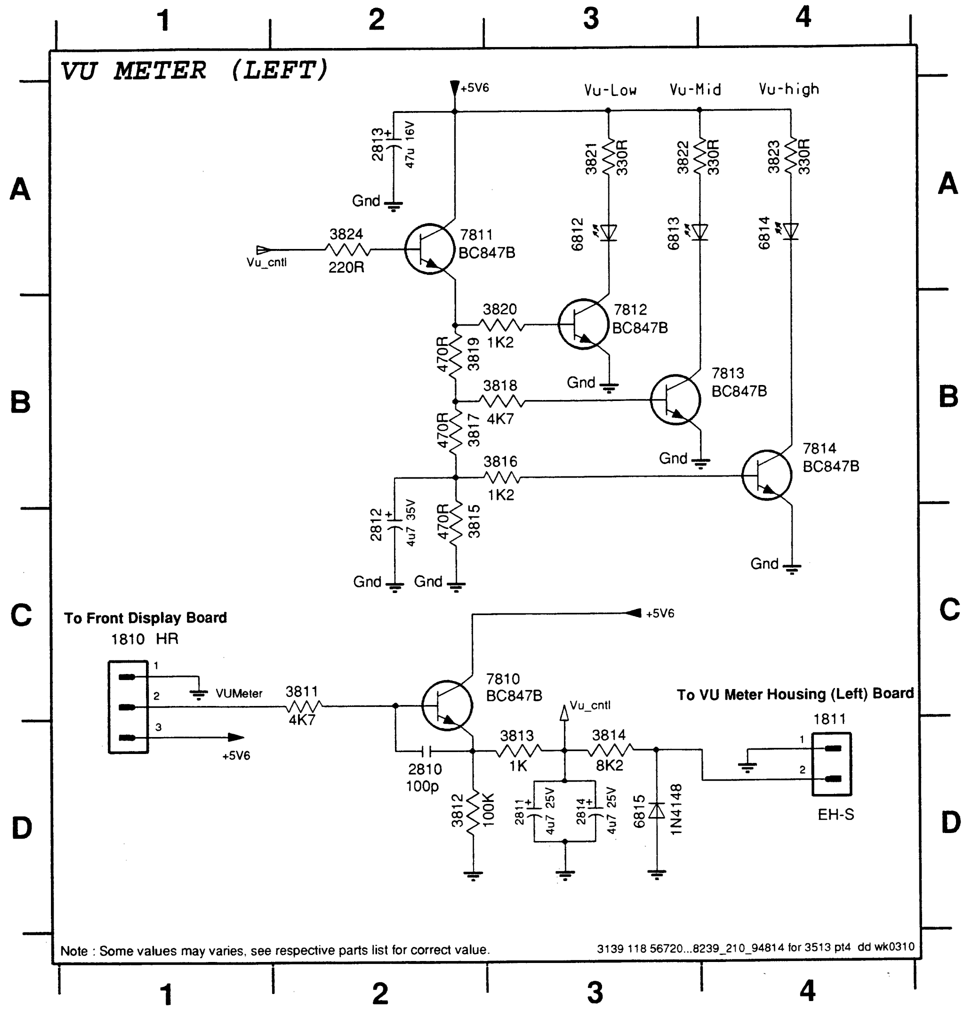
2810	D3	3813	D3	3819	A3	3824	C3	7813	B2
2811	D2	3814	D3	3820	A3	7810	D3	7814	C2
2814	D3	3815	C2	3822	B2	7811	C3		
3811	D3	3816	C2	3823	C3	7812	A2		


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

1
2
3
4
A
B
C
D
8239_210_94814_01
7812
3820
3819
3822
7813
3823
3816
3815
7814
7811
3824
2811
2814
7810
3814
3813
3811
2810
3139 113 3513 pt4 dd wk0310

VU METER (LEFT) BOARD - CIRCUIT DIAGRAM

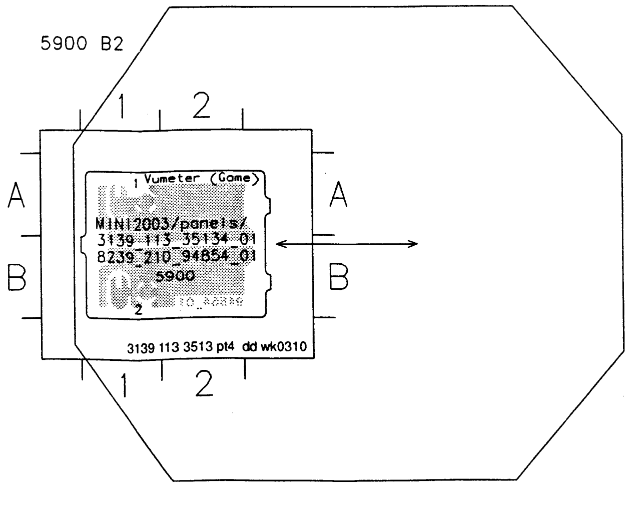
1810	C1	2811	D3	2814	D3	3813	D3	3816	B3	3819	B2	3822	A3	6812	A3	6815	D3	7812	B3
1811	D4	2812	C2	3811	C2	3814	D3	3817	B2	3820	B3	3823	A4	6813	A3	7810	C2	7813	B4
2810	D2	2813	A2	3812	D2	3815	C2	3818	B3	3821	A3	3824	A2	6814	A4	7811	A2	7814	B4


1
2
3
4
A
B
C
D
VU METER (LEFT)
+5V6
Vu-Low
Vu-Mid
Vu-high
2813
47u 16V
Gnd
3821
330R
3822
330R
3823
330R
6812
6813
6814
Vu_cntl
3824
220R
7811
BC847B
3820
1K2
7812
BC847B
470R
3819
3818
4K7
Gnd
7813
BC847B
470R
3817
3816
1K2
Gnd
7814
BC847B
2812
4u7 35V
470R
3815
Gnd
Gnd
Gnd
To Front Display Board
1810 HR
1
2
3
VUMeter
+5V6
3811
4K7
+5V6
7810
BC847B
Vu_cntl
2810
100p
3813
1K
3814
8K2
3812
100K
2811
4u7 25V
2814
4u7 25V
6815
1N4148
To VU Meter Housing (Left) Board
1811
1
2
EH-S
3139 118 56720...8239_210_94814 for 3513 pt4 dd wk0310

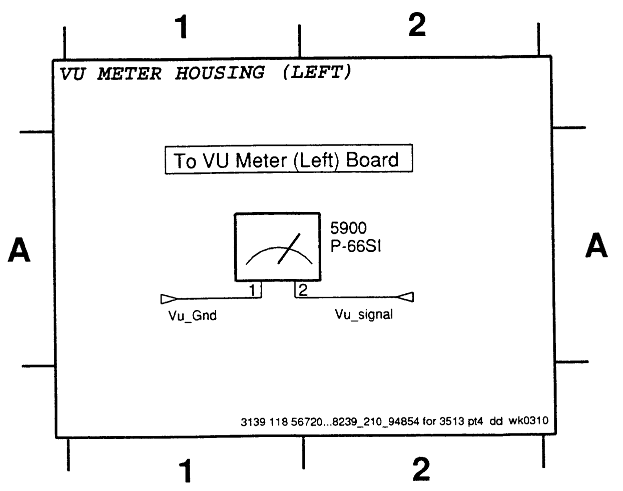
Note : Some values may varies, see respective parts list for correct value.

VU METER HOUSING (LEFT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM

5900 B2

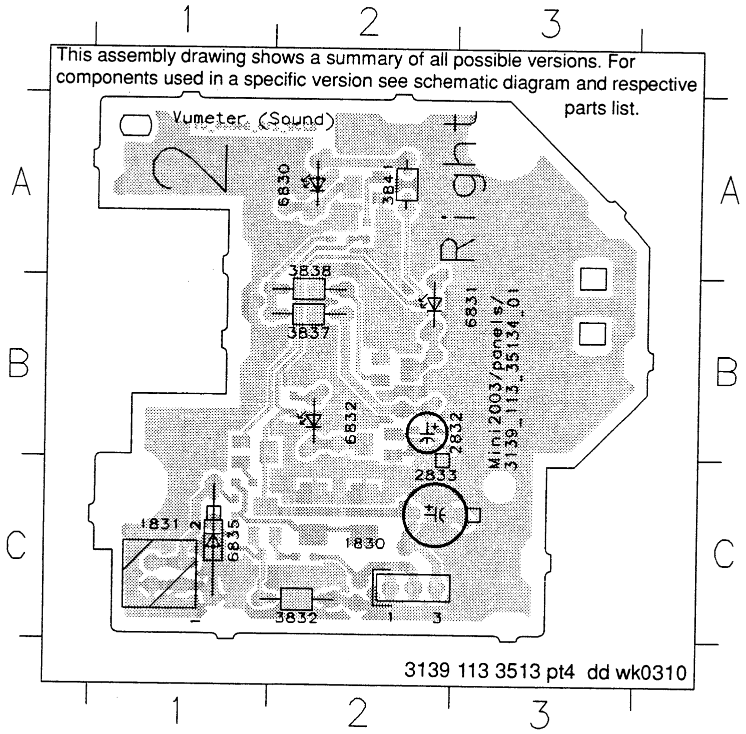

1
2
A
B
1 Vumeter (Gome)
MINI2003/panels/
3139_113_35134_01
8239_210_94854_01
5900
2
3139 113 3513 pt4 dd wk0310

5900 A2


1
2
A
VU METER HOUSING (LEFT)
To VU Meter (Left) Board
5900
P-66SI
1
2
Vu_Gnd
Vu_signal
3139 118 56720...8239_210_94854 for 3513 pt4 dd wk0310

VU METER (RIGHT) BOARD - COMPONENT LAYOUT

1830	C2
1831	C1
2832	B3
2833	C2
3832	C2
3837	B2
3838	A2
3841	A2
6830	A2
6831	B3
6832	B2
6835	C1

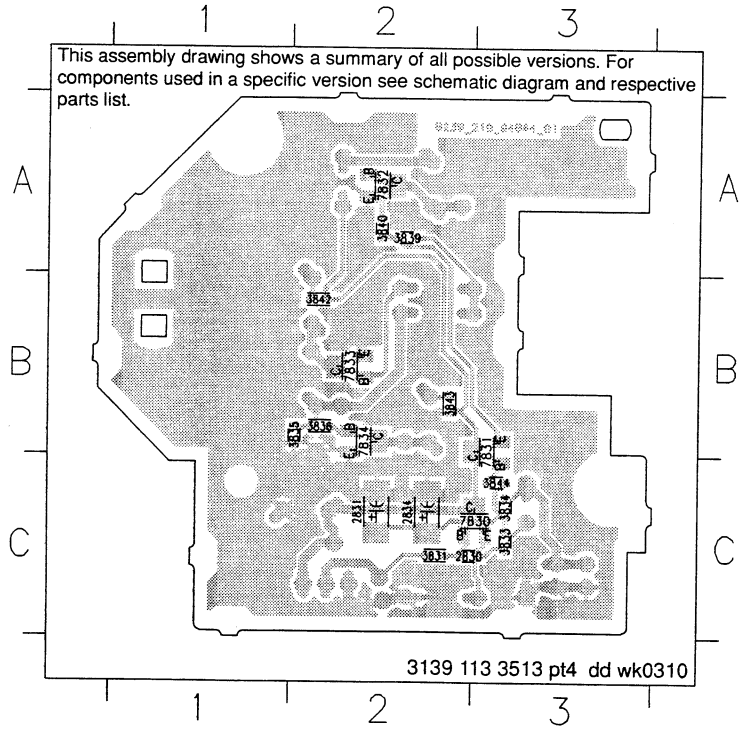

1
2
3
A
B
C
Vumeter (Sound)
2
Right
6830
3841
3838
3837
6831
Mini2003/panels/
3139_113_35134_01
6832
2832
2833
1831
2
6835
1830
3832
1
3

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

VU METER (RIGHT) BOARD - CHIP LAYOUT

2830	C2
2831	C2
2834	C2
3831	C2
3833	C3
3834	C3
3835	B2
3836	B2
3839	A2
3840	A2
3842	B2
3843	B2
3844	C3
7830	C3
7831	B3
7832	A2
7833	B2
7834	B2

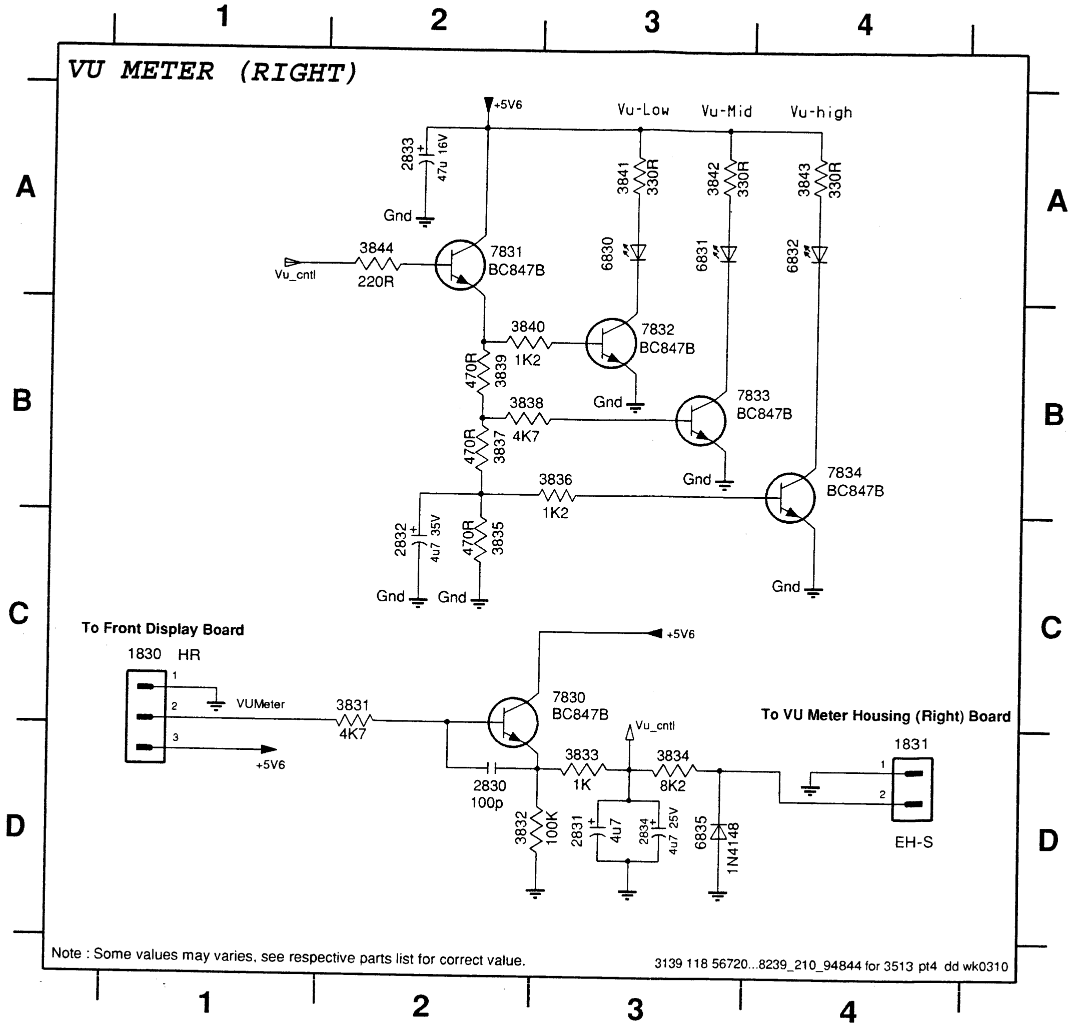

1
2
3
A
B
C
8239_210_94864_01
7832
3840
3839
3842
7833
3843
3835
3836
7834
7831
3844
2831
2834
7830
3834
3833
3831
2830

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

VU METER (RIGHT) BOARD - CIRCUIT DIAGRAM

1830	C1
1831	D4
2830	D2
2831	D3
2832	C2
2833	A2
2834	D3
3831	C2
3832	D2
3833	D3
3834	D3
3835	C2
3836	B3
3837	B2
3838	B2
3839	B2
3840	B2
3841	A3
3842	A3
3843	A4
3844	A2
6830	A3
6831	A3
6832	A4
6835	D3
7830	C3
7831	A2
7832	B3
7833	B3
7834	B4

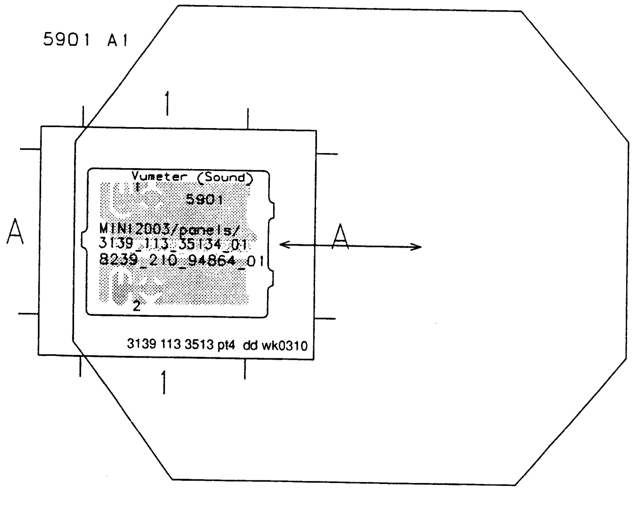

1
2
3
4
A
B
C
D
VU METER (RIGHT)
+5V6
Vu-Low
Vu-Mid
Vu-high
2833
47u 16V
Gnd
3841
330R
3842
330R
3843
330R
6830
6831
6832
3844
220R
Vu_cntl
7831
BC847B
3840
1K2
7832
BC847B
3839
470R
3838
4K7
Gnd
7833
BC847B
3837
470R
3836
1K2
Gnd
7834
BC847B
2832
4u7 35V
3835
470R
Gnd
Gnd
Gnd
To Front Display Board
1830 HR
1
2
3
VUMeter
+5V6
3831
4K7
+5V6
7830
BC847B
Vu_cntl
To VU Meter Housing (Right) Board
1831
3833
1K
3834
8K2
2830
100p
3832
100K
2831
4u7
2834
4u7 25V
6835
1N4148
1
2
EH-S

Note : Some values may varies, see respective parts list for correct value.

3139 118 56720...8239_210_94844 for 3513 pt4 dd wk0310

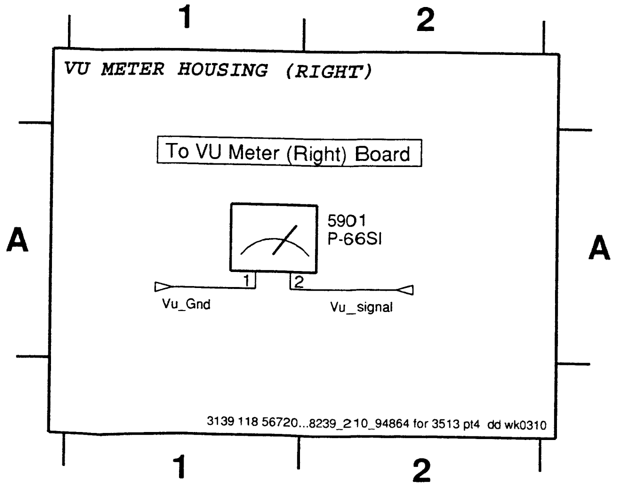
VU METER HOUSING (RIGHT) BOARD - COMPONENT LAYOUT & CIRCUIT DIAGRAM

5901 A1


1
A
A
1
Vumeter (Sound)
5901
MINI2003/panels/
3139_113_35134_01
8239_210_94864_01
2

3139 113 3513 pt4 dd wk0310

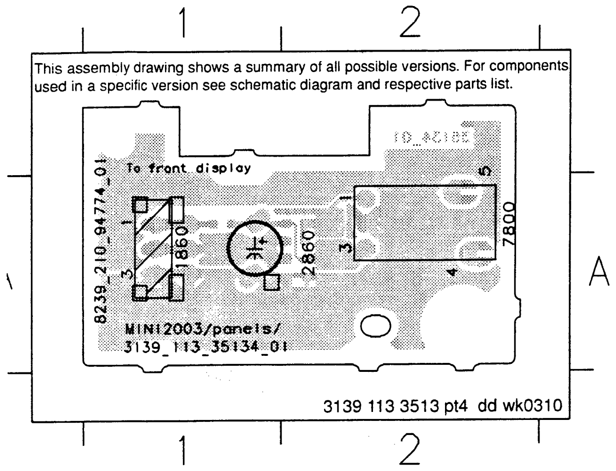
5901 A2


1
2
A
A
VU METER HOUSING (RIGHT)
To VU Meter (Right) Board
5901
P-66SI
1
2
Vu_Gnd
Vu_signal

3139 118 56720...8239_210_94864 for 3513 pt4 dd wk0310

R EYE BOARD - COMPONENT LAYOUT

1860 A1 2860 A2 7800 A2

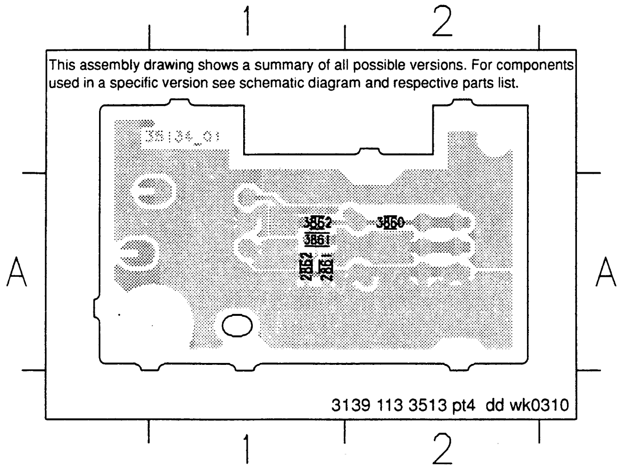

1
2
A
To front display
8239_210_94774_01
1860
2860
7800
ID_A6185
MINI2003/panels/
3139_113_35134_01
1
3
4
5

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

IR EYE BOARD - CHIP LAYOUT

2861 A1 3860 A2 3862 A1
2862 A1 3861 A1

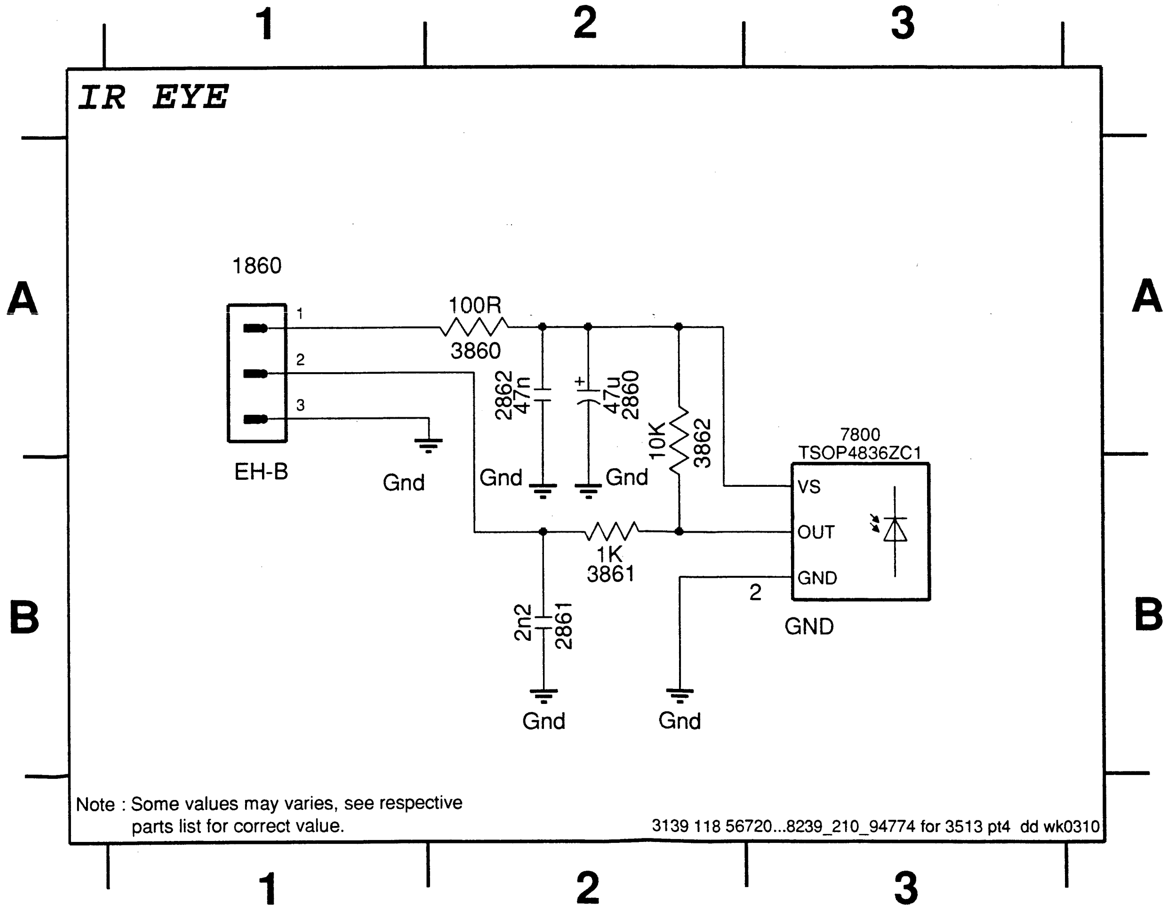

1
2
A
35134_01
3862
3861
3860
2862
2861

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

R EYE BOARD - CIRCUIT DIAGRAM

1860 A1 2860 A2 2861 B2 2862 A2 3860 A2 3861 B2 3862 A2 7800 A3

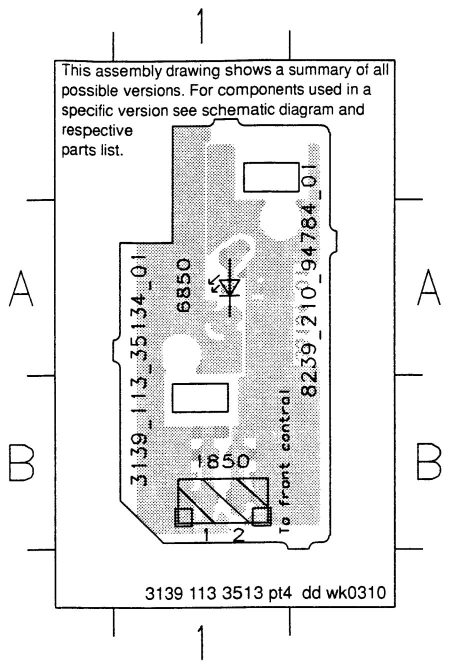

1
2
3
A
B
IR EYE
1860
1
2
3
EH-B
Gnd
100R
3860
2862
47n
47u
2860
10K
3862
Gnd
Gnd
7800
TSOP4836ZC1
VS
OUT
GND
1K
3861
2
GND
2n2
2861
Gnd
Gnd

Note : Some values may varies, see respective parts list for correct value.

3139 118 56720...8239_210_94774 for 3513 pt4 dd wk0310

USB LED BOARD - COMPONENT LAYOUT

1850 B1 6850 A1

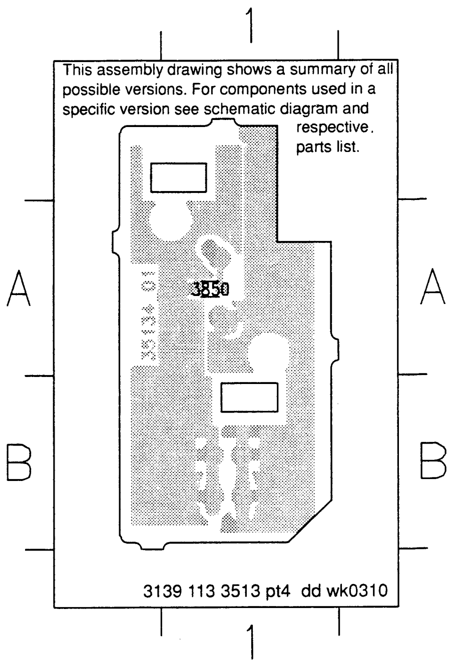

1
A
B
6850
3139_113_35134_01
8239_210_94784_01
1850
1
2
To front control

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

USB LED BOARD - CHIP LAYOUT

3850 A1

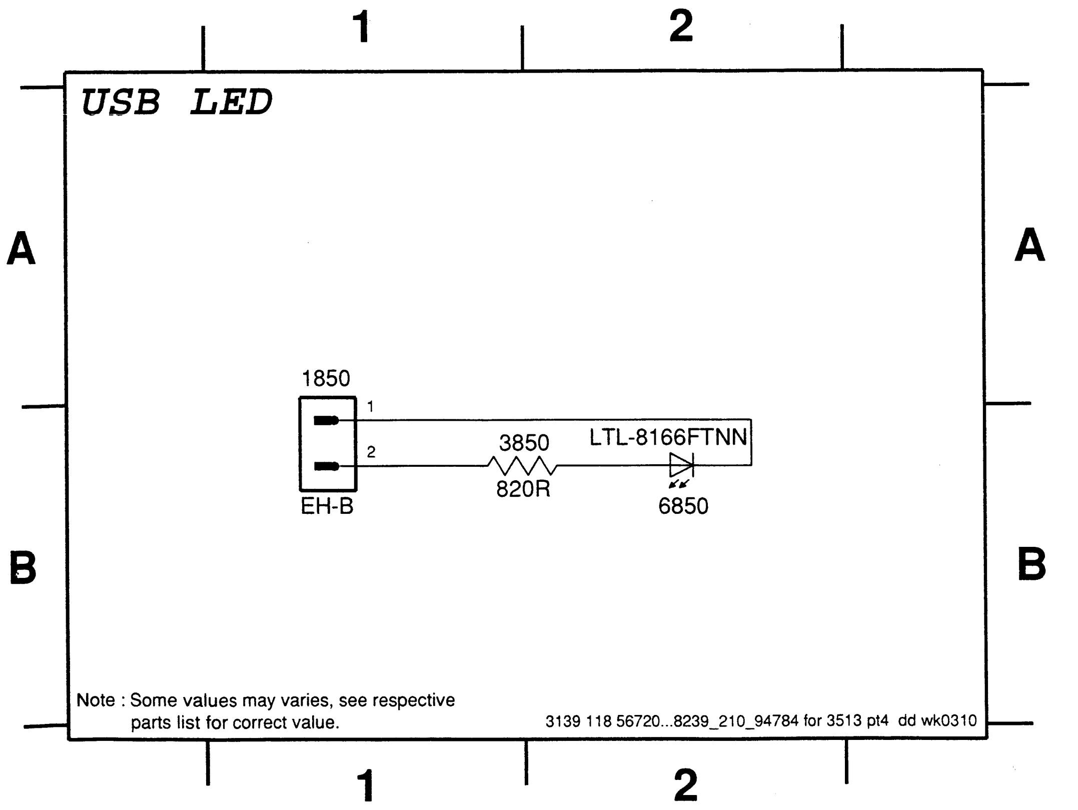

1
A
B
3850
35134_01

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3513 pt4 dd wk0310

USB LED BOARD - CIRCUIT DIAGRAM

1850 A1 3850 B1 6850 B2


1
2
A
B
USB LED
1850
1
2
EH-B
3850
820R
LTL-8166FTNN
6850

Note : Some values may varies, see respective parts list for correct value.

3139 118 56720...8239_210_94784 for 3513 pt4 dd wk0310

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

MISCELLANEOUS

1600	4822 265 11208	Flex Connector 10P
1602	4822 265 11535	Flex Connector 8P
1650	4822 276 13775	Tact Switch
1651	4822 276 13775	Tact Switch
1652	4822 276 13775	Tact Switch
1653	4822 276 13775	Tact Switch
1654	4822 276 13775	Tact Switch
1655	4822 276 13775	Tact Switch
1656	4822 276 13775	Tact Switch
1657	4822 276 13775	Tact Switch
1658	4822 276 13775	Tact Switch
1659	4822 276 13775	Tact Switch
1660	4822 276 13775	Tact Switch
1661	4822 276 13775	Tact Switch
1666	4822 276 13775	Tact Switch
1669	4822 276 13775	Tact Switch
1672	4822 276 13775	Tact Switch
1673	4822 276 13775	Tact Switch
1674	4822 276 13775	Tact Switch
1675	4822 276 13775	Tact Switch
1691	2422 129 16708	Rotary Encoder 24P
1692	4822 276 13775	Tact Switch
1840	4822 267 10733	Flex Connector 4P
1841	4822 265 11529	Headphone Socket
1880	4822 267 10958	Flex Connector 5P
1881	4822 276 13775	Tact Switch
1890	4822 265 10913	Cinch Socket - G/Port Audio R
1891	2422 026 05434	Cinch Socket - G/Port Audio L
1892	4822 267 31996	Cinch Socket - G/Port Video

CAPACITORS

2611	4822 124 81151	22uF 50V
2612	4822 124 21913	1uF 20% 63V
2614	4822 124 21913	1uF 20% 63V
2615	4822 124 23052	100uF 20% 16V
2616	3198 016 31020	1nF 25V
2617	3198 016 31020	1nF 25V
2620	4822 124 11947	10uF 20% 16V
2621	5322 126 11583	10nF 10% 50V
2622	5322 126 11583	10nF 10% 50V
2623	2020 552 94427	100pF 5% 50V
2624	2020 552 94427	100pF 5% 50V
2625	2238 586 59812	100nF 50V
2626	2238 586 59812	100nF 50V
2627	3198 016 31020	1nF 25V
2628	2238 586 59812	100nF 50V
2629	2238 586 59812	100nF 50V
2630	3198 016 31020	1nF 25V
2631	4822 126 13883	220pF 5% 50V
2632	4822 126 13883	220pF 5% 50V
2633	2020 552 94427	100pF 5% 50V
2634	2020 552 94427	100pF 5% 50V
2635	2020 552 94427	100pF 5% 50V
2636	2020 552 94427	100pF 5% 50V
2637	3198 016 38210	820pF 25V
2638	3198 016 38210	820pF 25V
2642	4822 126 13879	220nF +80/-20% 16V
2643	4822 126 13879	220nF +80/-20% 16V
2644	3198 028 42290	22uF 20% 35V
2645	4822 124 22652	2,2uF 20% 50V
2646	4822 124 22652	2,2uF 20% 50V
2647	3198 028 44790	47uF 20% 35V
2648	2238 586 59812	100nF 50V
2810	2020 552 94427	100pF 5% 50V
2811	4822 124 12312	4,7uF 20% 16V
2812	4822 124 22726	4,7uF 35V
2813	4822 124 81286	47uF 20% 16V
2814	4822 124 12312	4,7uF 20% 16V
2830	2020 552 94427	100pF 5% 50V
2831	4822 124 12312	4,7uF 20% 16V
2832	4822 124 22726	4,7uF 35V
2833	4822 124 81286	47uF 20% 16V
2834	4822 124 12312	4,7uF 20% 16V
2841	4822 126 14494	22nF 10% 25V
2843	4822 126 14494	22nF 10% 25V
2844	2238 586 59812	100nF 50V
2860	4822 124 40433	47uF 20% 25V
2861	4822 126 14238	2,2nF 50V
2862	3198 017 34730	47nF 16V
2880	4822 124 40769	4,7uF 20% 100V
2890	4822 126 13879	220nF +80/-20% 16V
2891	3198 016 36810	680pF 25V
2892	4822 126 13881	470pF 5% 50V
2894	3198 016 36810	680pF 25V
2895	4822 126 13881	470pF 5% 50V
2896	2020 552 94427	100pF 5% 50V
2897	2020 552 94427	100pF 5% 50V

RESISTORS

3628	4822 051 30102	1k 5% 0,062W
3629	4822 051 30102	1k 5% 0,062W
3630	4822 051 30221	220R 5% 0,062W
3636	4822 051 30471	470R 5% 0,062W
3637	4822 117 12925	47k 1% 0,063W
3638	4822 116 52175	100R 5% 0,5W
3647	4822 051 30471	470R 5% 0,062W
3651	4822 051 30102	1k 5% 0,062W
3652	4822 051 30102	1k 5% 0,062W
3653	4822 117 12925	47k 1% 0,063W
3655	4822 117 12925	47k 1% 0,063W
3656	4822 117 12925	47k 1% 0,063W
3657	4822 051 30472	4k7 5% 0,062W
3658	4822 051 30472	4k7 5% 0,062W
3659	4822 051 30472	4k7 5% 0,062W

ELECTRICAL PARTS LIST - FRONT CONTROL BOARD

3660	4822 101 11904	POTM 20KX2 20% 0,025W
3661	4822 051 30103	10k 5% 0,062W
3662	4822 051 30103	10k 5% 0,062W
3663	4822 051 30151	150R 5% 0,062W
3664	4822 051 30221	220R 5% 0,062W
3665	4822 051 30271	270R 5% 0,062W
3666	4822 051 30391	390R 5% 0,062W
3667	4822 051 30561	560R 5% 0,062W
3668	4822 117 12968	820R 5% 0,62W
3669	4822 117 11817	1k2 1% 1/16W
3670	4822 117 12903	1k8 1% 0,063W
3671	4822 051 30272	2k7 5% 0,062W
3672	4822 051 30472	4k7 5% 0,062W
3674	4822 051 30151	150R 5% 0,062W
3675	4822 051 30221	220R 5% 0,062W
3676	4822 051 30271	270R 5% 0,062W
3677	4822 051 30391	390R 5% 0,062W
3678	4822 051 30561	560R 5% 0,062W
3679	4822 117 12968	820R 5% 0,62W
3680	4822 117 11817	1k2 1% 1/16W
3681	4822 051 30272	2k7 5% 0,062W
3682	4822 051 30472	4k7 5% 0,062W
3683	4822 051 30102	1k 5% 0,062W
3684	4822 051 30102	1k 5% 0,062W
3685	4822 051 30222	2k2 5% 0,062W
3686	4822 051 30222	2k2 5% 0,062W
3689	4822 051 30472	4k7 5% 0,062W
3690	4822 051 30103	10k 5% 0,062W
3691	4822 051 30103	10k 5% 0,062W
3692	4822 051 30103	10k 5% 0,062W
3695	4822 051 30103	10k 5% 0,062W
3701	4822 051 30271	270R 5% 0,062W
3702	4822 051 30181	180R 5% 0,062W
3703	4822 051 30181	180R 5% 0,062W
3704	4822 051 30181	180R 5% 0,062W
3705	4822 051 30221	220R 5% 0,062W
3706	4822 051 30221	220R 5% 0,062W
3708	4822 117 12903	1k8 1% 0,063W
3709	4822 051 30472	4k7 5% 0,062W
3710	4822 051 30221	220R 5% 0,062W
3711	4822 051 30221	220R 5% 0,062W
3712	4822 051 30221	220R 5% 0,062W
3811	4822 051 30472	4k7 5% 0,062W
3812	4822 116 52234	100k 5% 0,5W
3813	4822 051 30102	1k 5% 0,062W
3814	4822 117 12902	8k2 1% 0,063W
3815	4822 051 30471	470R 5% 0,062W
3816	4822 117 11817	1k2 1% 1/16W
3817	4822 116 83883	470R 5% 0,5W
3818	4822 116 52283	4k7 5% 0,5W
3819	4822 051 30471	470R 5% 0,062W
3820	4822 117 11817	1k2 1% 1/16W
3821	4822 116 52219	330R 5% 0,5W
3822	4822 051 30331	330R 5% 0,062W
3823	4822 051 30331	330R 5% 0,062W
3824	4822 051 30221	220R 5% 0,062W
3831	4822 051 30472	4k7 5% 0,062W
3832	4822 116 52234	100k 5% 0,5W
3833	4822 051 30102	1k 5% 0,062W
3834	4822 117 12902	8k2 1% 0,063W
3835	4822 051 30471	470R 5% 0,062W
3836	4822 117 11817	1k2 1% 1/16W
3837	4822 116 83883	470R 5% 0,5W
3838	4822 116 52283	4k7 5% 0,5W
3839	4822 051 30471	470R 5% 0,062W
3840	4822 117 11817	1k2 1% 1/16W
3841	4822 116 52219	330R 5% 0,5W
3842	4822 051 30331	330R 5% 0,062W
3843	4822 051 30331	330R 5% 0,062W
3844	4822 051 30221	220R 5% 0,062W
3850	4822 117 12968	820R 5% 0,62W
3860	4822 051 30101	100R 5% 0,062W
3861	4822 051 30102	1k 5% 0,062W
3862	4822 051 30103	10k 5% 0,062W
3880	4822 117 12925	47k 1% 0,063W
3881	4822 117 12968	820R 5% 0,62W
3890	4822 051 30103	10k 5% 0,062W
3891	4822 050 21003	10k 1% 0,06W
3892	4822 117 11817	1k2 1% 1/16W
3893	4822 117 11817	1k2 1% 1/16W
4600	4822 051 30008	0R Jumper 0603
4610	4822 051 30008	0R Jumper 0603
4890	4822 051 30008	0R Jumper 0603
4891	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5601	4822 157 62552	Coil 2,2uH 5%
5602	4822 157 62552	Coil 2,2uH 5%
5840	4822 157 62552	Coil 2,2uH 5%
5841	4822 157 62552	Coil 2,2uH 5%
5842	4822 157 62552	Coil 2,2uH 5%

DIODES

6620	4822 130 11589	LED VS LTL-1CHAE
6621	4822 130 11589	LED VS LTL-1CHAE
6622	4822 130 11589	LED VS LTL-1CHAE
6631	4822 130 11589	LED VS LTL-1CHAE
6632	4822 130 11589	LED VS LTL-1CHAE
6633	4822 130 11589	LED VS LTL-1CHAE
6812	9322 178 15676	LED VS LTL-8166FTNN
6813	9322 178 15676	LED VS LTL-8166FTNN
6814	9322 191 85676	LED VS LTL816KETNN
6815	4822 130 30621	1N4148
6830	9322 178 15676	LED VS LTL-8166FTNN

LECTRICAL PARTS LIST - FRONT CONTROL BOARD

IODES

331	9322 178 15676	LED VS LTL-8166FTNN
332	9322 191 85676	LED VS LTL816KETNN
335	4822 130 30621	1N4148
350	9322 178 15676	LED VS LTL-8166FTNN
380	4822 130 30621	1N4148
381	9322 167 73676	LED VS LTL-4221NLC-KA

RANSISTORS & INTEGRATED CIRCUITS

601	4822 209 15449	74HC4094D
602	5322 130 60159	BC847B
603	5322 130 60159	BC847B
604	5322 130 60159	BC847B
605	5322 130 60159	BC847B
606	4822 209 15449	74HC4094D
607	4822 130 42804	BC817-25
608	4822 130 42804	BC817-25
609	4822 130 42804	BC817-25
610	4822 130 42804	BC817-25
620	4822 209 33985	TDA8579T/N1
650	5322 130 60159	BC847B
800	9322 185 97667	IR Receiver TSOP4836ZC1
810	5322 130 60159	BC847B
811	5322 130 60159	BC847B
812	5322 130 60159	BC847B
813	5322 130 60159	BC847B
814	5322 130 60159	BC847B
830	5322 130 60159	BC847B
831	5322 130 60159	BC847B
832	5322 130 60159	BC847B
833	5322 130 60159	BC847B
834	5322 130 60159	BC847B
880	4822 130 60373	BC857B

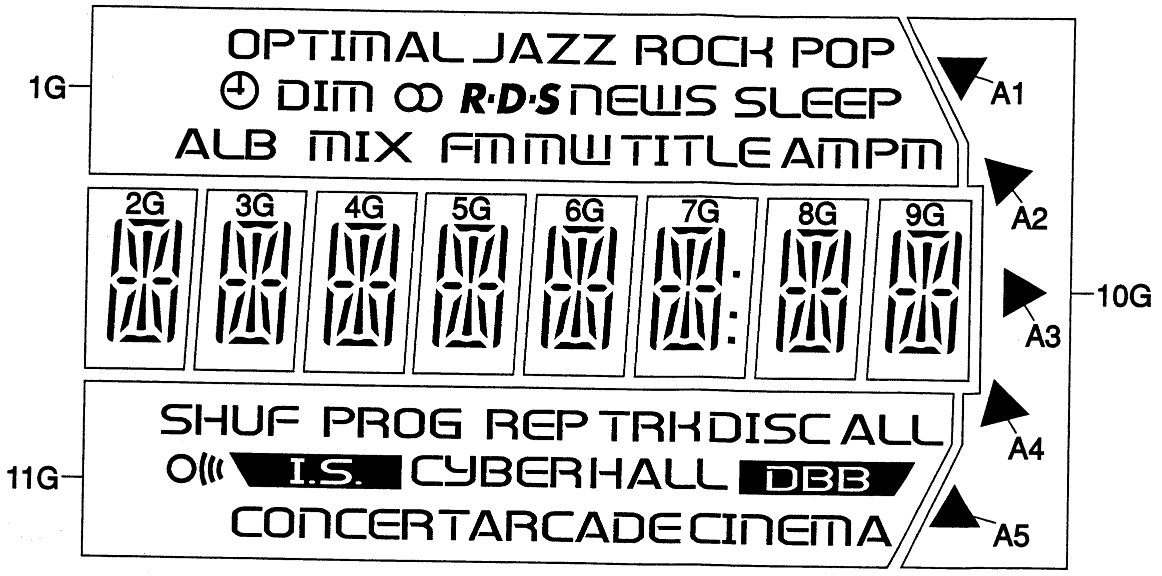
Note : Only the parts mentioned in this list are normal service spare parts.

FRONT DISPLAY BOARD

TABLE OF CONTENTS

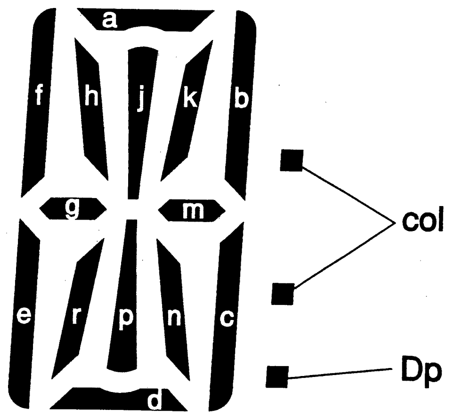
FTD Display Pin Connection 6-1
Display part - Component Layout.................................... 6-2
Display part - Chip Layout 6-3
Display part - Circuit Diagram 6-4
5DTC Key part - Layout & Circuit diagram...................... 6-5
Electrical parts list.. 6-5

FTD DISPLAY PIN CONNECTION



1G
OPTIMAL JAZZ ROCK POP
DIM R·D·S NEWS SLEEP
ALB MIX FM MW TITLE AM PM
A1
A2
2G
3G
4G
5G
6G
7G
8G
9G
10G
A3
A4
11G
SHUF PROG REP TRK DISC ALL
O(((I.S. CYBER HALL DBB
CONCERT ARCADE CINEMA
A5

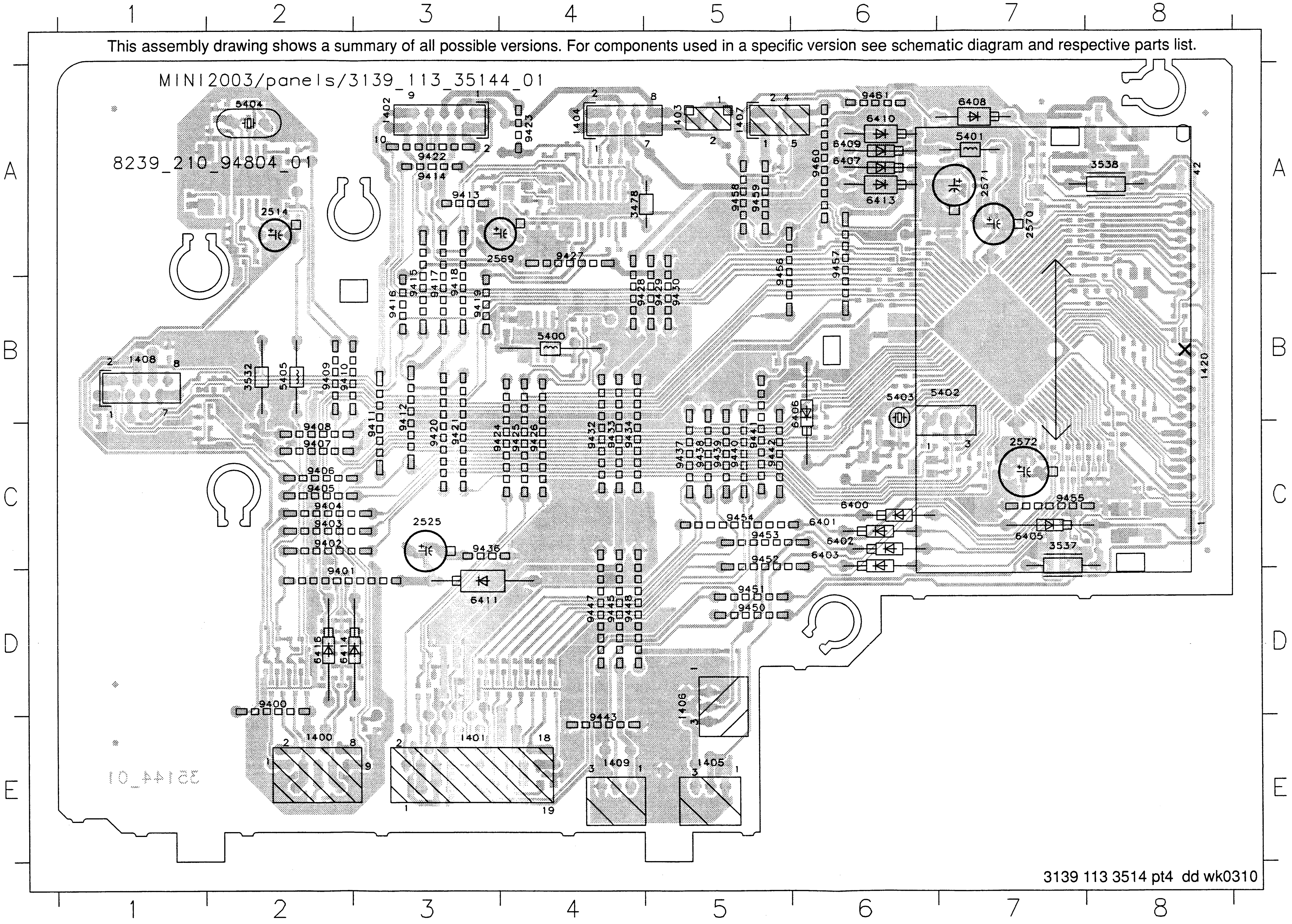
(2G - 9G)



a
f
h
j
k
b
g
m
col
e
r
p
n
c
d
Dp

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G
P1	OPTIMAL	a	a	a	a	a	a	a	a	A1	O(((
P2	JAZZ	h	h	h	h	h	h	h	h	A2	SHUF
P3	ROCK	j , p	j , p	j , p	j , p	j , p	j , p	j , p	j , p	A3	PROG
P4	POP	k	k	k	k	k	k	k	k	A4	REP
P5	◷	b	b	b	b	b	b	b	b	A5	TRK
P6	DIM	f	f	f	f	f	f	f	f	-	DISC
P7	∞	m	m	m	m	m	m	m	m	-	ALL
P8	R·D·S	g	g	g	g	g	g	g	g	-	I.S.
P9	NEWS	c	c	c	c	c	c	c	c	-	CYBER
P10	SLEEP	e	e	e	e	e	e	e	e	-	HALL
P11	ALB	r	r	r	r	r	r	r	r	-	DBB
P12	MIX	n	n	n	n	n	n	n	n	-	CONCERT
P13	FM	d	d	d	d	d	d	d	d	-	ARCADE
P14	MW	-	-	-	-	-	col	-	-	-	CINEMA
P15	TITLE	-	-	-	-	-	Dp	-	-	-	-
P16	AM	-	-	-	-	-	-	-	-	-	-
P17	PM	-	-	-	-	-	-	-	-	-	-

ISPLAY BOARD - COMPONENT LAYOUT



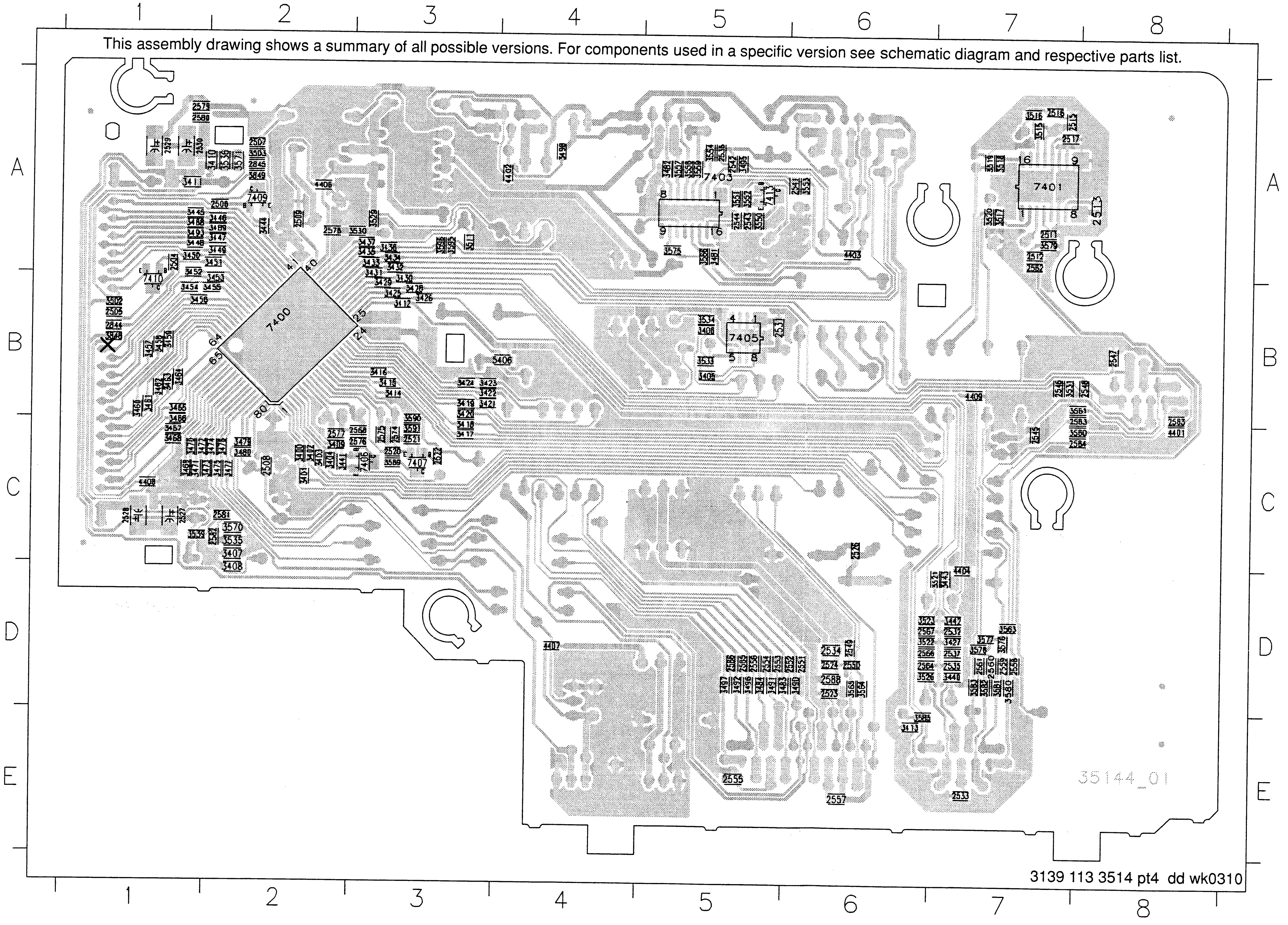
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

1
2
3
4
5
6
7
8
A
B
C
D
E
MINI2003/panels/3139_113_35144_01
8239_210_94804_01
5404
2514
1402
9422
9414
9413
2569
9427
9423
1404
1403
1407
3478
9461
6410
6409
6407
6413
6408
5401
3538
2571
2570
9458
9459
9460
9456
9457
9416
9415
9417
9418
9419
9428
9429
9430
5400
1408
3532
5405
9409
9410
9411
9412
9420
9421
9424
9425
9426
9432
9433
9434
9437
9438
9439
9440
9441
9442
6406
5403
5402
2572
9455
6405
3537
1420
9408
9407
9406
9405
9404
9403
9402
9401
2525
9436
6411
6400
6401
6402
6403
9454
9453
9452
9451
9450
9447
9445
9448
6416
6414
9400
9443
1406
1400
1401
1409
1405
35144_01

3139 113 3514 pt4 dd wk0310

1400	E2
1401	E3
1402	A3
1403	A5
1404	A4
1405	E5
1406	D5
1407	A5
1408	B1
1409	E4
1420	B8
2514	A2
2525	C3
2569	A4
2570	A7
2571	A7
2572	C7
3478	A4
3532	B2
3537	C7
3538	A8
5400	B4
5401	A7
5402	B7
5403	B6
5404	A2
5405	B2
6400	C6
6401	C6
6402	C6
6403	C6
6405	C7
6406	B6
6407	A6
6408	A7
6409	A6
6410	A6
6411	D3
6413	A6
6414	D2
6416	D2
9400	D2
9401	D2
9402	C2
9403	C2
9404	C2
9405	C2
9406	C2
9407	C2
9408	C2
9409	B2
9410	B2
9411	C3
9412	B3
9413	A3
9414	A3
9415	B3
9416	B3
9417	B3
9418	B3
9419	B3
9420	C3
9421	C3
9422	A3
9423	A4
9424	C3
9425	C4
9426	C4
9427	A4
9428	B4
9429	B5
9430	B5
9432	C4
9433	C4
9434	C4
9436	C3
9437	C5
9438	C5
9439	C5
9440	C5
9441	C5
9442	C5
9443	E4
9445	D4
9447	D4
9448	D4
9450	D5
9451	D5
9452	C5
9453	C5
9454	C5
9455	C7
9456	A5
9457	A6
9458	A5
9459	A5
9460	A6
9461	A6

DISPLAY BOARD - CHIP LAYOUT

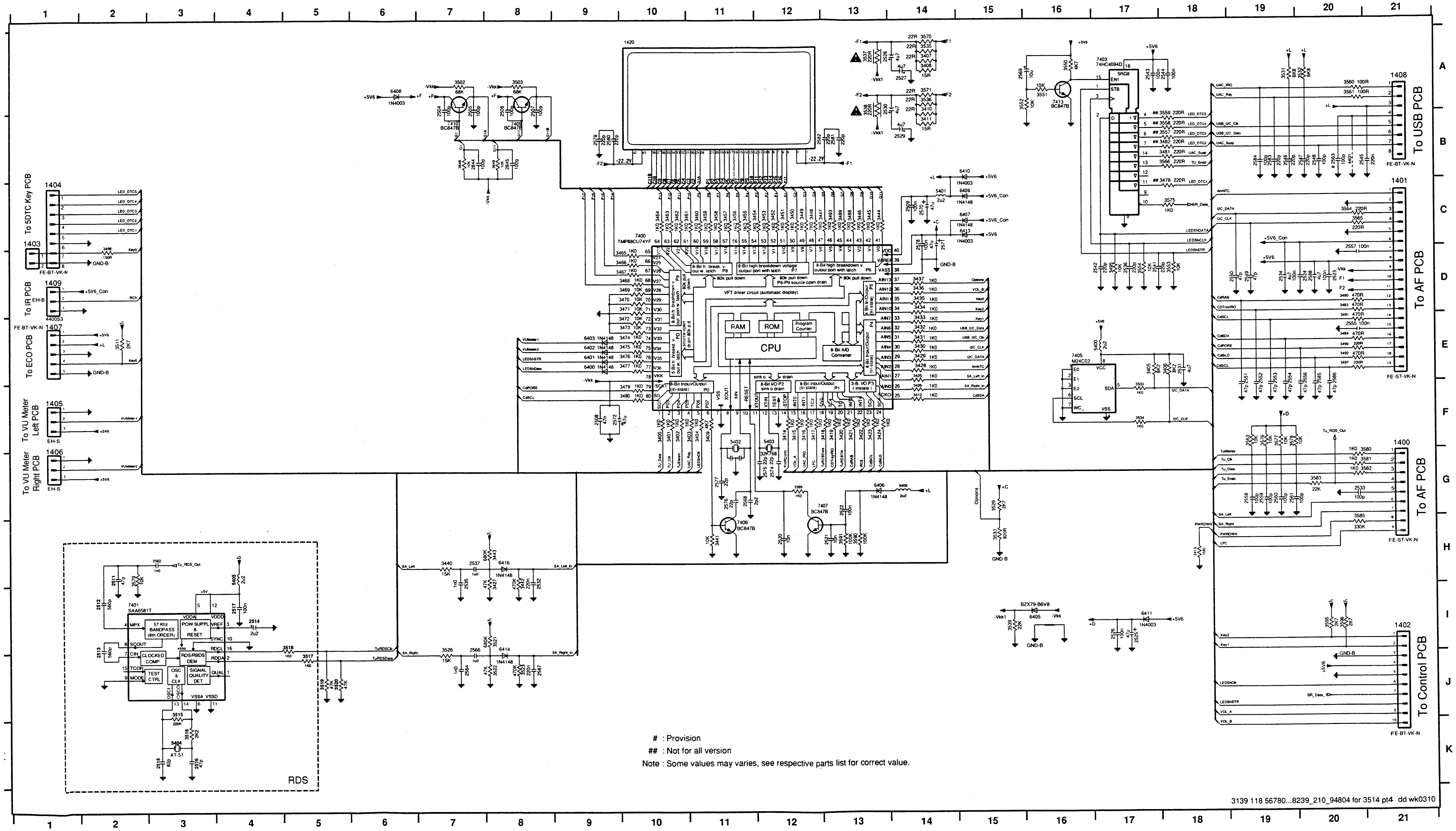


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

2504	A1	2588	D6	3468	C1	3581	D7
2505	B1	2844	B1	3469	C1	3582	D7
2506	A2	2845	A2	3470	C1	3583	D7
2507	A2	3400	C2	3471	C1	3585	E6
2508	C2	3401	C2	3472	C1	3589	C3
2509	A2	3402	C2	3473	C2	3590	C3
2511	A7	3403	C2	3474	C2	3591	C3
2512	A7	3404	C2	3475	C2	3595	A3
2513	A8	3405	B5	3476	C2	3596	A3
2515	A7	3406	B5	3477	C2	3848	B1
2516	A7	3407	C2	3479	C2	3849	A2
2517	A7	3408	D2	3480	C2	4401	C8
2520	C3	3409	C2	3481	A5	4402	A4
2521	C3	3410	A2	3482	A5	4403	A6
2522	C3	3411	A1	3483	D6	4404	D7
2523	D6	3412	B3	3484	D5	4406	A2
2524	D6	3413	E6	3488	A1	4407	D4
2526	C6	3414	B3	3489	A2	4408	C1
2527	C1	3415	B3	3490	D6	4409	B7
2528	C1	3416	B3	3491	D5	5406	B4
2529	A1	3417	C3	3492	D5	7400	B2
2530	A1	3418	C3	3493	A1	7401	A7
2531	B5	3419	B3	3495	A5	7403	A5
2532	D7	3420	B3	3496	D5	7405	B5
2533	E7	3421	B3	3497	D5	7406	C3
2534	D6	3422	B3	3498	A4	7407	C3
2535	D7	3423	B3	3502	B1	7409	A2
2536	A5	3424	B3	3503	A2	7410	B1
2537	D7	3425	B3	3511	A3	7413	A5
2541	A6	3426	B3	3515	A7		
2542	A5	3427	D7	3516	A7		
2543	A5	3428	B3	3517	A7		
2544	A5	3429	B3	3518	A7		
2545	C7	3430	B3	3519	A7		
2546	B7	3431	A3	3520	A7		
2547	B8	3432	A3	3521	D7		
2548	B8	3433	A3	3522	D6		
2549	D6	3434	A3	3523	D6		
2550	D6	3435	A3	3526	D6		
2551	D6	3436	A3	3529	A3		
2552	D6	3437	A3	3530	A3		
2553	D5	3440	D7	3531	B7		
2554	D5	3441	C2	3533	B5		
2555	E5	3442	D7	3534	B5		
2556	D5	3443	D7	3535	C2		
2557	E6	3444	A2	3536	A2		
2558	D7	3445	A1	3539	C1		
2559	D7	3446	A2	3550	A5		
2560	D7	3447	A2	3551	A5		
2561	D7	3448	A1	3552	A5		
2562	A7	3449	A2	3553	A6		
2563	B8	3450	A1	3554	A5		
2564	D6	3451	A2	3557	A5		
2566	D6	3452	B1	3558	A5		
2567	D6	3453	B2	3559	A5		
2568	C3	3454	B1	3560	C8		
2574	C3	3455	B2	3561	B8		
2575	C3	3456	B1	3563	D7		
2576	C3	3457	B1	3564	D6		
2577	C2	3458	B1	3565	D6		
2578	A2	3459	B1	3566	A5		
2579	A1	3460	B1	3570	C2		
2580	A1	3461	B1	3571	A2		
2581	C2	3462	B1	3575	A5		
2582	C2	3463	B1	3576	D7		
2583	B8	3464	B1	3577	D7		
2584	C8	3465	B1	3578	D7		
2585	D5	3466	C1	3579	A7		
2586	D5	3467	C1	3580	D7		

ISPLAY BOARD - CIRCUIT DIAGRAM

1400	G21
1401	C21
1402	I21
1403	C1
1404	C1
1405	F1
1406	G1
1407	E1
1408	A21
1409	D1
1420	A10
2504	A7
2505	A7
2506	A8
2507	A8
2508	F9
2509	C14
2511	H2
2512	I2
2513	I2
2514	I4
2515	K3
2516	K3
2517	I4
2520	H12
2521	H13
2522	G13
2523	D20
2524	D20
2525	I17
2526	I17
2527	A14
2528	A13
2529	B14
2530	A13
2531	E18
2532	H8
2533	G20
2534	D19
2535	H7
2536	D17
2537	H7
2541	D17
2542	D17
2543	A17
2544	A18
2545	B21
2546	B19
2547	B20
2548	B20
2549	D19
2550	D19
2551	E19
2552	E19
2553	E19
2554	E19
2555	E20
2556	E20
2557	D20
2558	G19
2559	G19
2560	G19
2561	G19
2562	H3
2563	B20
2564	J7
2566	I7
2567	J8
2568	G11
2569	A15
2570	C14
2571	C14
2572	F9
2574	G12
2575	G12
2576	G11
2577	G11
2578	C14
2579	B9
2580	B9
2581	B13
2582	B12
2583	B19
2584	B19
2585	E20
2586	E20
2588	D20
2844	B7
2845	B8
3400	F10
3401	F10
3402	F10
3403	F11
3404	F11
3405	E17
3406	E18
3407	A14
3408	A14
3409	F11
3410	A14
3411	B14
3412	F14
3413	H18
3414	F12
3415	F12
3416	F12
3417	F12
3418	F13
3419	F13
3420	F13
3421	F13
3422	F13
3423	F13
3424	F13
3425	E14
3426	F14
3427	H8
3428	E14
3429	E14
3430	E14
3431	E14
3432	E14
3433	E14
3434	D14
3435	D14
3436	D14
3437	D14
3440	H7
3441	H11
3442	H8
3443	H8
3444	C13
3445	C13
3446	C13
3447	C13
3448	C12
3449	C12
3450	C12
3451	C12
3452	C12
3453	C12
3454	C12
3455	C11
3456	C11
3457	C11
3458	C11
3459	C11
3460	C11
3461	C11
3462	C10
3463	C10
3464	C10
3465	D10
3466	D10
3467	D10
3468	D10
3469	D10
3470	D10
3471	D10
3472	E10
3473	E10
3474	E10
3475	E10
3476	E10
3477	E10
3478	C18
3479	F10
3480	F10
3481	B18
3482	B18
3483	D20
3484	E20
3488	C13
3489	C13
3490	D20
3491	E20
3492	E20
3493	C13
3495	D17
3496	E20
3497	E20
3498	C2
3502	A7
3503	A8
3511	E2
3515	J3
3516	K3
3517	J5
3518	I5
3519	J5
3520	J5
3521	I8
3522	J8
3523	J8
3526	I7
3529	G15
3530	H15
3531	A19
3532	A20
3533	F17
3534	F17
3535	A14
3536	A14
3537	A13
3538	A13
3539	I15
3550	A16
3551	A16
3552	A16
3553	D18
3554	D17
3557	B18
3558	B18
3559	B18
3560	A20
3561	A20
3563	F19
3564	C20
3565	C20
3566	B18
3570	A14
3571	A14
3575	C18
3576	F19
3577	F19
3578	F19
3579	H2
3580	G21
3581	G21
3582	G21
3583	G20
3585	H20
3589	G12
3590	H13
3591	H13
3595	I20
3596	I20
3848	B7
3849	B8
4401	B20
5400	E17
5401	C14
5402	F11
5403	F12
5404	K3
5405	H4
5406	G14
6400	E9
6401	E9
6402	E9
6403	E9
6405	I16
6406	G13
6407	C15
6408	A6
6409	C15
6410	B15
6411	I17
6413	C15
6414	I8
6416	H8
7400	C10
7401	I2
7403	A17
7405	E16
7406	H11
7407	G13
7409	B8
7410	B7
7413	A16


To 5DTC Key PCB
To IR PCB
To ECO PCB
To VU Meter Left PCB
To VU Meter Right PCB
To USB PCB
To AF PCB
To AF PCB
To Control PCB
1420
7400
TMP88CU74YF
FAM
ROM
Program Counter
CPU
8-Bit A/D Converter
VFT driver circuit (automatic display)
7401
SAA6581T
57 Khz BANDPASS (8th ORDER)
POW SUPPL & RESET
CLOCKED COMP
RDS/RBDS DEM
TEST CTRL
OSC & CLK
SIGNAL QUALITY DET
RDS
7403
74HC4094D
7405
M24C02
BZX79-B6V8
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
FE-BT-VK-N
FE-ST-VK-N
EH-S
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
A
B
C
D
E
F
G
H
I
J
K

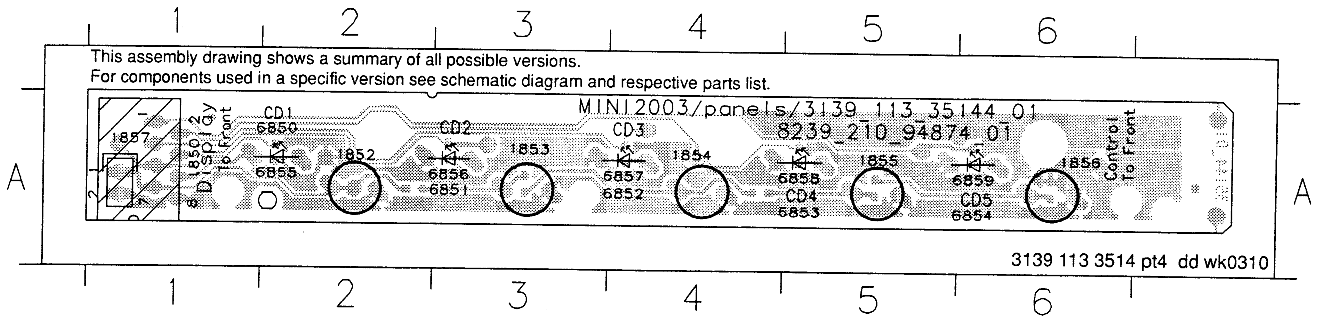
# : Provision

## : Not for all version

Note : Some values may varies, see respective parts list for correct value.

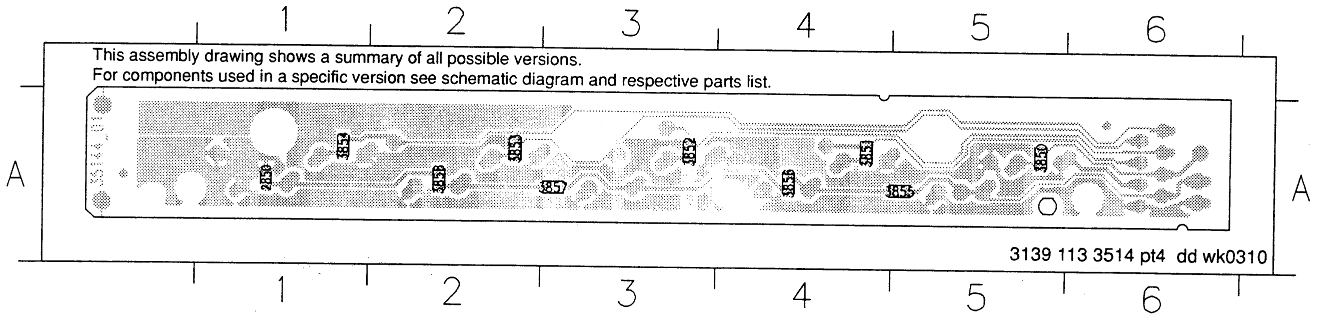
5DTC KEY BOARD - COMPONENT LAYOUT

1850 A1
1852 A2
1853 A3
1854 A4
1855 A5
1856 A6
1857 A1
6850 A2
6851 A3
6852 A4
6853 A5
6854 A6
6855 A2
6856 A3
6857 A4
6858 A5
6859 A6


1
2
3
4
5
6
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
MINI2003/panels/3139 113 35144 01
8239_210_94874_01
1857
1850
Display To Front
CD1
6850
6855
1852
CD2
6856
6851
1853
CD3
6857
6852
1854
6858
CD4
6853
1855
6859
CD5
6854
1856
Control To Front
3139 113 3514 pt4 dd wk0310

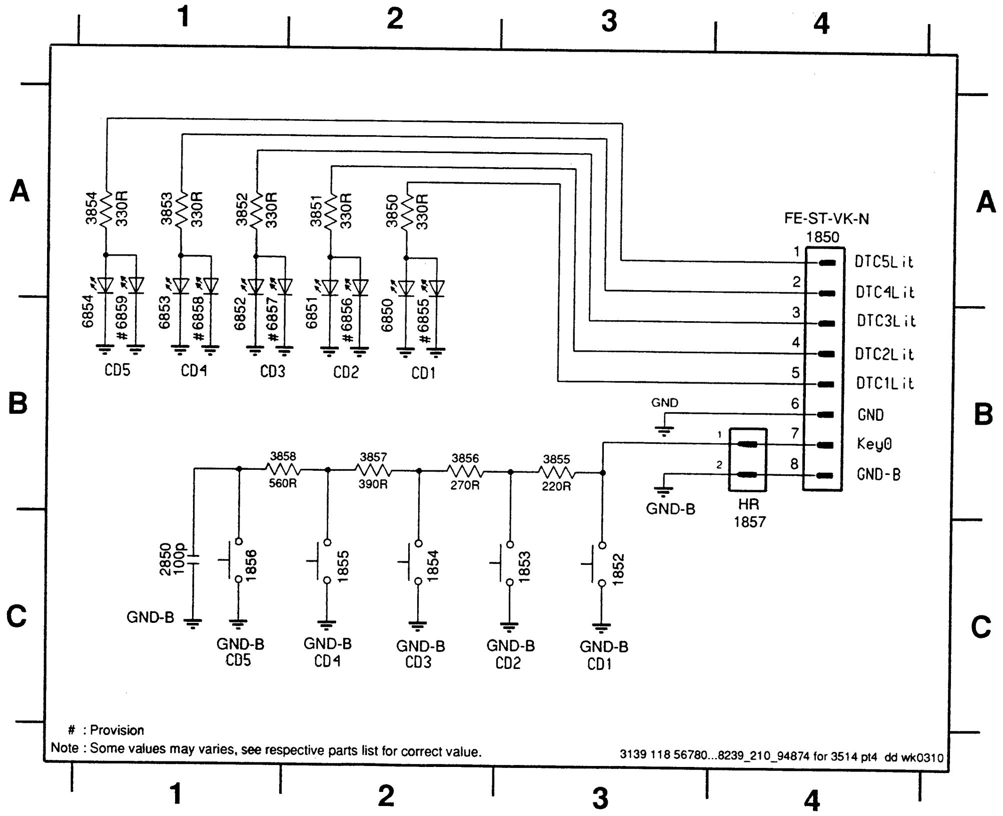
5DTC KEY BOARD - CHIP LAYOUT

2850 A1
3850 A5
3851 A4
3852 A3
3853 A2
3854 A1
3855 A5
3856 A4
3857 A3
3858 A2


1
2
3
4
5
6
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
2850
3854
3858
3853
3857
3852
3856
3851
3855
3850
3139 113 3514 pt4 dd wk0310

5DTC KEY BOARD - CIRCUIT DIAGRAM

1850 A4
1852 C3
1853 C3
1854 C2
1855 C2
1856 C1
1857 C4
2850 C1
3850 A2
3851 A2
3852 A1
3853 A1
3854 A1
3855 B3
3856 B2
3857 B2
3858 B1
6850 A2
6851 A2
6852 A1
6853 A1
6854 B1
6855 B2
6856 B2
6857 B1
6858 B1
6859 B1


1
2
3
4
A
B
C
3854 330R
3853 330R
3852 330R
3851 330R
3850 330R
6854 #6859
6853 #6858
6852 #6857
6851 #6856
6850 #6855
CD5
CD4
CD3
CD2
CD1
FE-ST-VK-N
1850
DTC5Lit
DTC4Lit
DTC3Lit
DTC2Lit
DTC1Lit
GND
Key0
GND-B
GND
GND-B
HR
1857
3858 560R
3857 390R
3856 270R
3855 220R
2850 100p
1856
1855
1854
1853
1852
GND-B
GND-B CD5
GND-B CD4
GND-B CD3
GND-B CD2
GND-B CD1
# : Provision
Note : Some values may varies, see respective parts list for correct value.
3139 118 56780...8239_210_94874 for 3514 pt4 dd wk0310

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

MISCELLANEOUS

1400	4822 265 11531	Flex Connector 9P
1401	4822 265 11545	Flex Connector 19P
1402	4822 267 10729	Flex Connector 10P
1404	4822 265 11515	Flex Connector 8P
1407	4822 267 10954	Flex Connector 5P
1408	4822 265 11515	Flex Connector 8P
1420	3139 110 53411	FTD BJ902GNK
1850	4822 265 11535	Flex Connector 8P
1852	4822 276 13775	Tact Switch
1853	4822 276 13775	Tact Switch
1854	4822 276 13775	Tact Switch
1855	4822 276 13775	Tact Switch
1856	4822 276 13775	Tact Switch

CAPACITORS

2504	2020 552 94427	100pF 5% 50V
2505	2020 552 94427	100pF 5% 50V
2506	2020 552 94427	100pF 5% 50V
2507	2020 552 94427	100pF 5% 50V
2508	3198 024 44730	47nF 50V
2509	2238 586 59812	100nF 50V
2520	5322 126 11583	10nF 10% 50V
2521	5322 126 11583	10nF 10% 50V
2522	2238 586 59812	100nF 50V
2523	2238 586 59812	100nF 50V
2524	2238 586 59812	100nF 50V
2525	4822 124 12233	47uF 20% 25V
2526	2238 586 59812	100nF 50V
2527	4822 124 12312	4,7uF 20% 16V
2528	4822 124 12312	4,7uF 20% 16V
2529	4822 124 12312	4,7uF 20% 16V
2530	4822 124 12312	4,7uF 20% 16V
2531	2020 552 96305	4,7uF +80/-20% 10V
2532	4822 126 13879	220nF +80/-20% 16V
2533	2020 552 94427	100pF 5% 50V
2534	2020 552 96305	4,7uF +80/-20% 10V
2535	5322 126 11578	1nF 10% 50V
2536	4822 126 13883	220pF 5% 50V
2537	3198 017 41050	1uF 10V
2541	4822 126 13883	220pF 5% 50V
2542	4822 126 13883	220pF 5% 50V
2543	2238 586 59812	100nF 50V
2544	2238 586 59812	100nF 50V
2545	4822 126 13879	220nF +80/-20% 16V
2546	4822 126 13883	220pF 5% 50V
2547	4822 126 13883	220pF 5% 50V
2548	2020 552 94427	100pF 5% 50V
2549	4822 126 11785	47pF 5% 50V
2550	4822 126 11785	47pF 5% 50V
2551	4822 126 11785	47pF 5% 50V
2552	4822 126 11785	47pF 5% 50V
2553	4822 126 11785	47pF 5% 50V
2554	4822 126 11785	47pF 5% 50V
2555	2238 586 59812	100nF 50V
2556	4822 126 11785	47pF 5% 50V
2557	2238 586 59812	100nF 50V
2558	2020 552 94427	100pF 5% 50V
2559	2020 552 94427	100pF 5% 50V
2560	2020 552 94427	100pF 5% 50V
2561	2020 552 94427	100pF 5% 50V
2564	5322 126 11578	1nF 10% 50V
2566	3198 017 41050	1uF 10V
2567	4822 126 13879	220nF +80/-20% 16V
2568	4822 126 14223	2,2pF 50V
2569	4822 124 40248	10uF 20% 63V
2570	4822 124 12233	47uF 20% 25V
2571	4822 124 12233	47uF 20% 25V
2572	3198 028 44790	47uF 20% 35V
2574	4822 122 33761	22pF 5% 50V
2575	4822 122 33761	22pF 5% 50V
2576	4822 122 33761	22pF 5% 50V
2577	4822 122 33761	22pF 5% 50V
2578	2238 586 59812	100nF 50V
2579	4822 126 13883	220pF 5% 50V
2580	4822 126 13883	220pF 5% 50V
2581	4822 126 13883	220pF 5% 50V
2582	4822 126 13883	220pF 5% 50V
2583	4822 126 13883	220pF 5% 50V
2584	2020 552 94427	100pF 5% 50V
2585	4822 126 11785	47pF 5% 50V
2586	4822 126 11785	47pF 5% 50V
2588	2020 552 96305	4,7uF +80/-20% 10V
2844	2020 552 94427	100pF 5% 50V
2845	2020 552 94427	100pF 5% 50V
2850	2020 552 94427	100pF 5% 50V

RESISTORS

3400	4822 051 30102	1k 5% 0,062W
3401	4822 051 30102	1k 5% 0,062W
3402	4822 051 30102	1k 5% 0,062W
3403	4822 051 30102	1k 5% 0,062W
3404	4822 051 30102	1k 5% 0,062W
3405	4822 117 12902	8k2 1% 0,063W
3406	4822 117 12902	8k2 1% 0,063W
3407	4822 051 20229	22R 5% 0,1W
3408	4822 051 20159	15R 5% 0,1W
3409	4822 051 30472	4k7 5% 0,062W
3410	4822 051 20229	22R 5% 0,1W
3411	4822 051 20159	15R 5% 0,1W
3412	4822 051 30102	1k 5% 0,062W
3413	4822 051 30105	1M 5% 0,062W
3414	4822 051 30102	1k 5% 0,062W
3415	4822 051 30102	1k 5% 0,062W
3416	4822 051 30102	1k 5% 0,062W

LECTRICAL PARTS LIST - FRONT DISPLAY BOARD

ESISTORS

417	4822 051 30102	1k 5% 0,062W
418	4822 051 30102	1k 5% 0,062W
419	4822 051 30102	1k 5% 0,062W
420	4822 051 30102	1k 5% 0,062W
421	4822 051 30102	1k 5% 0,062W
422	4822 051 30102	1k 5% 0,062W
423	4822 051 30102	1k 5% 0,062W
424	4822 051 30102	1k 5% 0,062W
425	4822 051 30102	1k 5% 0,062W
426	4822 051 30102	1k 5% 0,062W
427	4822 117 12925	47k 1% 0,063W
428	4822 051 30102	1k 5% 0,062W
429	4822 051 30102	1k 5% 0,062W
430	4822 051 30102	1k 5% 0,062W
431	4822 051 30102	1k 5% 0,062W
432	4822 051 30102	1k 5% 0,062W
433	4822 051 30102	1k 5% 0,062W
434	4822 051 30102	1k 5% 0,062W
435	4822 051 30102	1k 5% 0,062W
436	4822 051 30102	1k 5% 0,062W
437	4822 051 30102	1k 5% 0,062W
440	4822 051 30153	15k 5% 0,062W
441	4822 051 30103	10k 5% 0,062W
442	4822 051 30474	470k 5% 0,062W
443	4822 051 30684	680k 5% 0,062W
444	4822 051 30102	1k 5% 0,062W
445	4822 051 30102	1k 5% 0,062W
446	4822 051 30102	1k 5% 0,062W
447	4822 051 30102	1k 5% 0,062W
448	4822 051 30102	1k 5% 0,062W
449	4822 051 30102	1k 5% 0,062W
450	4822 051 30102	1k 5% 0,062W
451	4822 051 30102	1k 5% 0,062W
452	4822 051 30102	1k 5% 0,062W
453	4822 051 30102	1k 5% 0,062W
454	4822 051 30102	1k 5% 0,062W
455	4822 051 30102	1k 5% 0,062W
456	4822 051 30102	1k 5% 0,062W
457	4822 051 30102	1k 5% 0,062W
458	4822 051 30102	1k 5% 0,062W
459	4822 051 30102	1k 5% 0,062W
460	4822 051 30102	1k 5% 0,062W
461	4822 051 30102	1k 5% 0,062W
462	4822 051 30102	1k 5% 0,062W
463	4822 051 30102	1k 5% 0,062W
464	4822 051 30102	1k 5% 0,062W
465	4822 051 30102	1k 5% 0,062W
466	4822 051 30102	1k 5% 0,062W
467	4822 051 30102	1k 5% 0,062W
468	4822 051 30102	1k 5% 0,062W
469	4822 051 30103	10k 5% 0,062W
470	4822 051 30103	10k 5% 0,062W
3471	4822 051 30103	10k 5% 0,062W
3472	4822 051 30103	10k 5% 0,062W
3473	4822 051 30103	10k 5% 0,062W
3474	4822 051 30102	1k 5% 0,062W
3475	4822 051 30102	1k 5% 0,062W
3476	4822 051 30102	1k 5% 0,062W
3477	4822 051 30102	1k 5% 0,062W
3479	4822 051 30102	1k 5% 0,062W
3480	4822 051 30102	1k 5% 0,062W
3481	4822 051 30221	220R 5% 0,062W
3483	4822 051 30471	470R 5% 0,062W
3484	4822 051 30471	470R 5% 0,062W
3488	4822 051 30102	1k 5% 0,062W
3489	4822 051 30102	1k 5% 0,062W
3490	4822 051 30471	470R 5% 0,062W
3491	4822 051 30471	470R 5% 0,062W
3492	4822 051 30471	470R 5% 0,062W
3493	4822 051 30102	1k 5% 0,062W
3495	4822 051 30103	10k 5% 0,062W
3496	4822 051 30221	220R 5% 0,062W
3497	4822 051 30221	220R 5% 0,062W
3498	4822 051 30151	150R 5% 0,062W
3502	4822 051 30683	68k 5% 0,062W
3503	4822 051 30683	68k 5% 0,062W
3511	4822 051 30272	2k7 5% 0,062W
3519	4822 117 12925	47k 1% 0,063W
3520	4822 117 12925	47k 1% 0,063W
3521	4822 051 30684	680k 5% 0,062W
3522	4822 117 12925	47k 1% 0,063W
3523	4822 051 30474	470k 5% 0,062W
3526	4822 051 30153	15k 5% 0,062W
3529	4822 051 30272	2k7 5% 0,062W
3530	4822 117 12968	820R 5% 0,62W
3531	4822 051 30682	6k8 5% 0,062W
3532	4822 116 83961	6k8 5%
3533	4822 051 30102	1k 5% 0,062W
3534	4822 051 30102	1k 5% 0,062W
3535	4822 051 20229	22R 5% 0,1W
3536	4822 051 20229	22R 5% 0,1W
3537	4822 052 10221	△ 220R 5% 0,33W
3538	4822 052 10221	△ 220R 5% 0,33W
3539	4822 051 30223	22k 5% 0,062W
3550	4822 051 30472	4k7 5% 0,062W
3551	4822 051 30103	10k 5% 0,062W
3552	4822 051 30103	10k 5% 0,062W
3553	4822 051 30103	10k 5% 0,062W
3554	4822 051 30103	10k 5% 0,062W
3560	4822 051 30101	100R 5% 0,062W
3561	4822 051 30101	100R 5% 0,062W
3563	4822 051 30103	10k 5% 0,062W
3564	4822 051 30221	220R 5% 0,062W
3565	4822 051 30221	220R 5% 0,062W

ELECTRICAL PARTS LIST - FRONT DISPLAY BOARD

3566	4822 051 30221	220R 5% 0,062W
3570	4822 051 20229	22R 5% 0,1W
3571	4822 051 20229	22R 5% 0,1W
3575	4822 051 30102	1k 5% 0,062W
3576	4822 051 30103	10k 5% 0,062W
3577	4822 051 30103	10k 5% 0,062W
3578	4822 051 30103	10k 5% 0,062W
3580	4822 051 30102	1k 5% 0,062W
3581	4822 051 30102	1k 5% 0,062W
3582	4822 051 30102	1k 5% 0,062W
3583	4822 051 30223	22k 5% 0,062W
3585	4822 051 30334	330k 5% 0,062W
3589	4822 051 30102	1k 5% 0,062W
3590	4822 117 13632	100k 1% 0,62W
3591	4822 117 13632	100k 1% 0,62W
3595	4822 051 30272	2k7 5% 0,062W
3596	4822 051 30272	2k7 5% 0,062W
3848	4822 051 30103	10k 5% 0,062W
3849	4822 051 30103	10k 5% 0,062W
3850	4822 051 30331	330R 5% 0,062W
3851	4822 051 30331	330R 5% 0,062W
3852	4822 051 30331	330R 5% 0,062W
3853	4822 051 30331	330R 5% 0,062W
3854	4822 051 30331	330R 5% 0,062W
3855	4822 051 30221	220R 5% 0,062W
3856	4822 051 30271	270R 5% 0,062W
3857	4822 051 30391	390R 5% 0,062W
3858	4822 051 30561	560R 5% 0,062W
4401	4822 051 30008	0R Jumper 0603
4402	4822 051 30008	0R Jumper 0603
4403	4822 051 30008	0R Jumper 0603
4404	4822 051 30008	0R Jumper 0603
4406	4822 051 30008	0R Jumper 0603
4407	4822 051 30008	0R Jumper 0603
4408	4822 051 30008	0R Jumper 0603
4409	4822 051 30008	0R Jumper 0603

COILS & FILTERS

5400	4822 157 62552	Coil 2,2uH 5%
5401	4822 157 62552	Coil 2,2uH 5%
5402	5322 242 73686	RES CER 12MHz
5403	4822 242 70938	RES XTL 32,768kHz
5406	4822 157 10586	Coil 2,2uH 10%

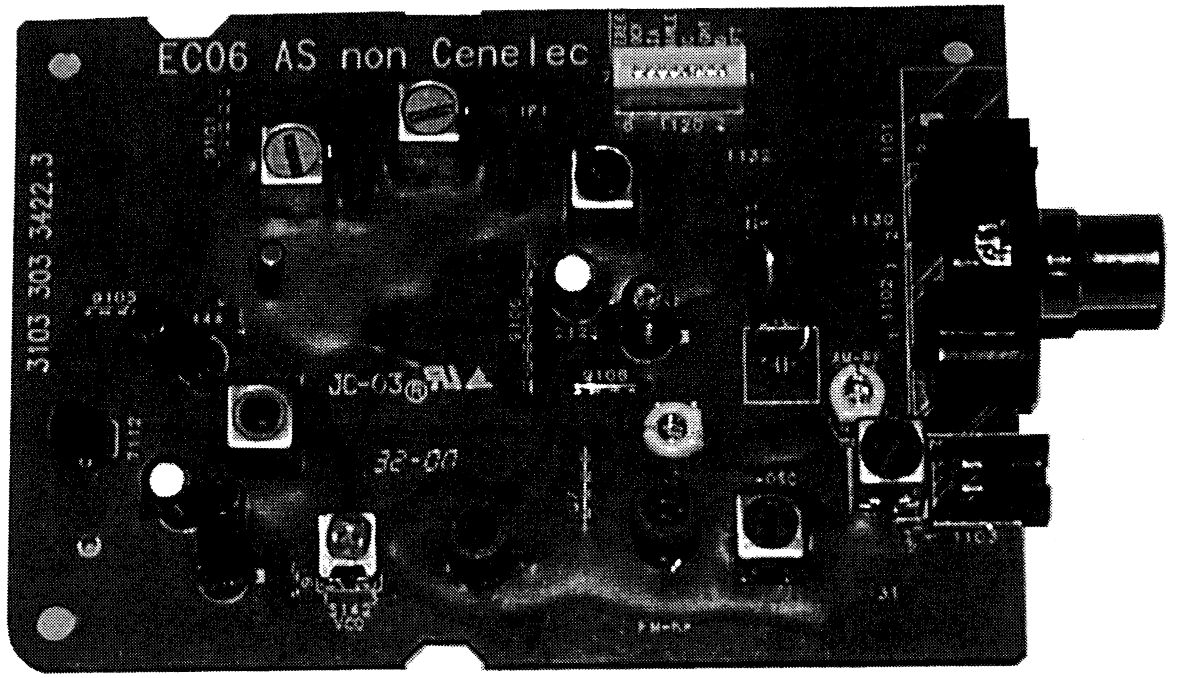
DIODES

6400	4822 130 30621	1N4148
6401	4822 130 30621	1N4148
6402	4822 130 30621	1N4148
6403	4822 130 30621	1N4148
6405	4822 130 34278	BZX79-B6V8
6406	4822 130 30621	1N4148
6407	4822 130 30621	1N4148
6408	4822 130 31878	1N4003G
6409	4822 130 30621	1N4148
6410	4822 130 31878	1N4003G
6411	4822 130 31878	1N4003G
6413	4822 130 31878	1N4003G
6414	4822 130 30621	1N4148
6416	4822 130 30621	1N4148
6850	9322 178 15676	LED VS LTL-8166FTNN
6851	9322 178 15676	LED VS LTL-8166FTNN
6852	9322 178 15676	LED VS LTL-8166FTNN
6853	9322 178 15676	LED VS LTL-8166FTNN
6854	9322 178 15676	LED VS LTL-8166FTNN

TRANSISTORS & INTEGRATED CIRCUITS

7400	3140 110 52071	TMP88CU74YF - FWM569,779
7403	4822 209 15449	74HC4094D
7405	9322 145 26668	M24C02-WMN6
7406	5322 130 60159	BC847B
7407	5322 130 60159	BC847B
7409	5322 130 60159	BC847B
7410	5322 130 60159	BC847B
7413	5322 130 60159	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.


EC06 AS non Cenelec
3103 303 3422.3
JC-03
1120

ECO6 Tuner Board

version: ***SYSTEMS non-CENELEC***

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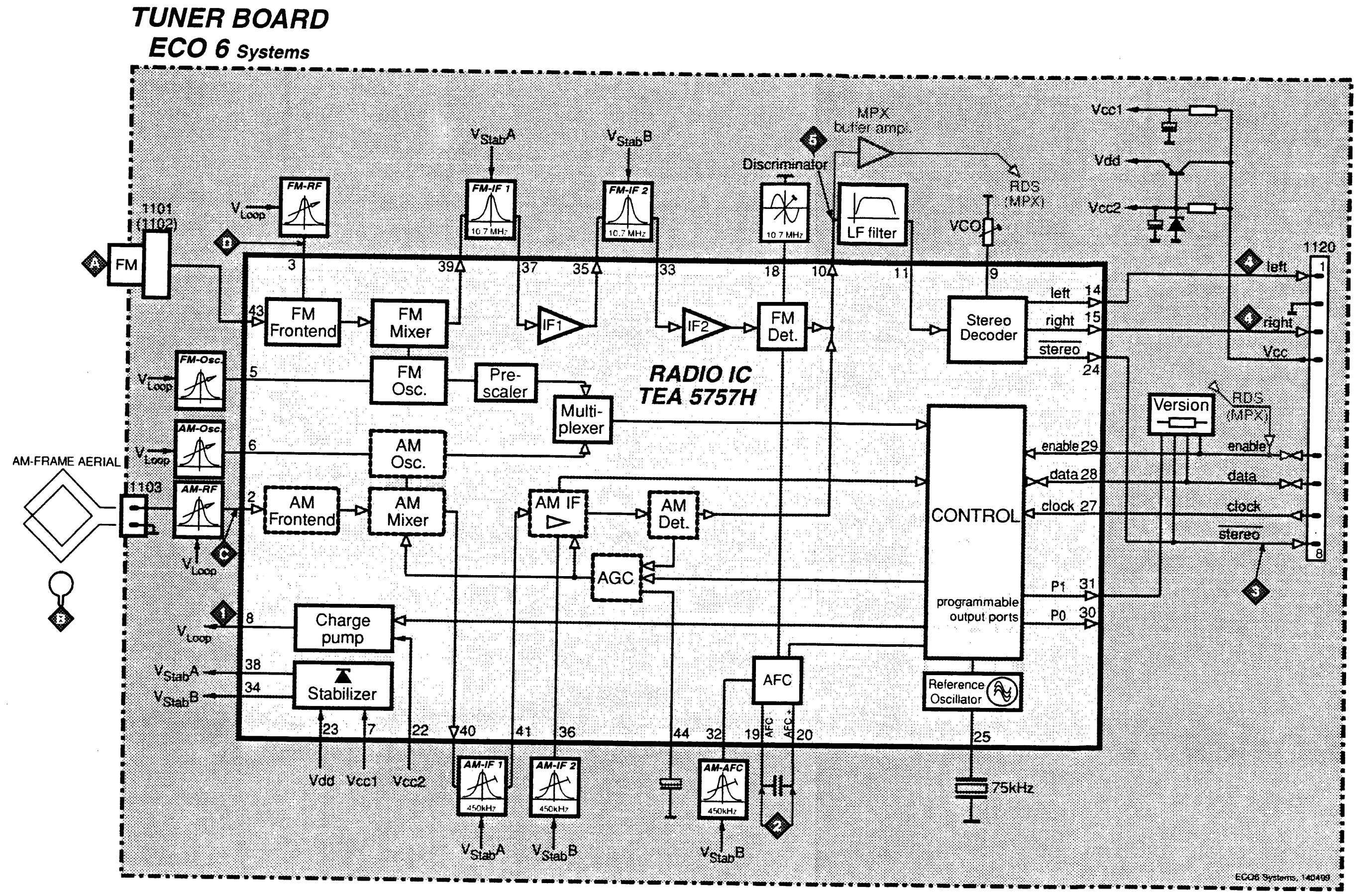
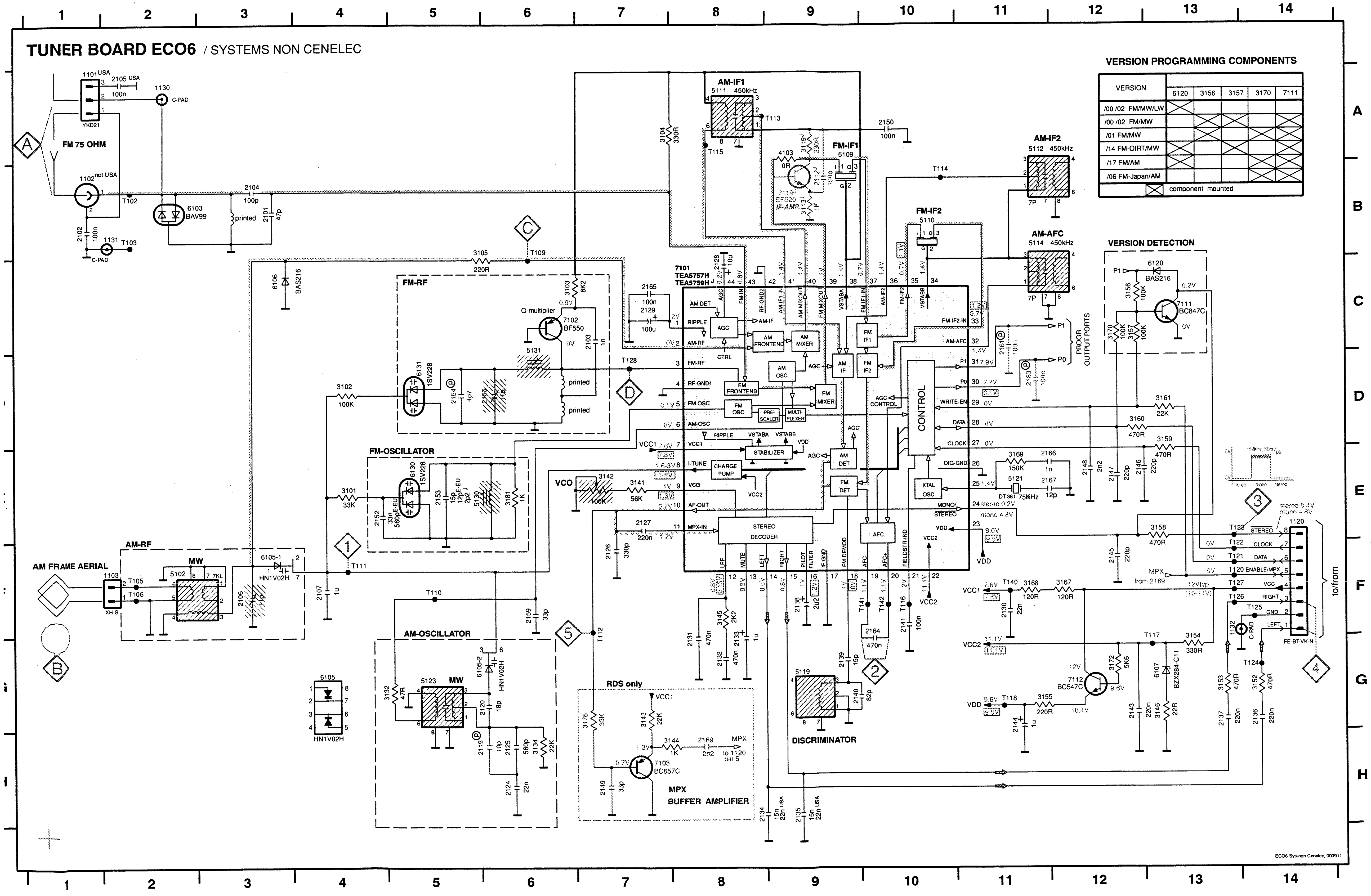
BLOCK DIAGRAM


TUNER BOARD
***ECO 6** Systems*

1101
(1102)
FM
A
B
C
D
1
2
3
4
5
AM-FRAME AERIAL
1103
FM-RF
FM-Osc.
AM-Osc.
AM-RF
V_Loop
V_StabA
V_StabB
FM-IF 1
FM-IF 2
10.7 MHz
Discriminator
MPX buffer ampl.
LF filter
RDS (MPX)
VCO
Vcc1
Vdd
Vcc2
1120
left
right
Vcc
enable
data
clock
stereo
Version
FM Frontend
FM Mixer
FM Osc.
Pre-scaler
Multi-plexer
IF1
IF2
FM Det.
RADIO IC TEA 5757H
Stereo Decoder
AM Osc.
AM Frontend
AM Mixer
AM IF
AM Det.
AGC
CONTROL
programmable output ports
P1
P0
Charge pump
Stabilizer
AFC
Reference Oscillator
AM-IF 1
AM-IF 2
AM-AFC
450kHz
Vdd
Vcc1
Vcc2
75kHz
3
43
5
6
2
8
38
34
23
7
22
40
41
36
44
32
19
20
39
37
35
33
18
10
11
9
14
15
24
29
28
27
31
30
25
ECO6 Systems, 140499


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
TUNER BOARD ECO6 / SYSTEMS NON CENELEC
FM 75 OHM
AM-RF
MW
AM FRAME AERIAL
FM-RF
Q-multiplier
FM-OSCILLATOR
AM-OSCILLATOR
VCO
RDS only
MPX BUFFER AMPLIFIER
AM-IF1 5111 450kHz
FM-IF1 5109
IF-AMP.
FM-IF2 5110
AM-IF2 5112 450kHz
AM-AFC 5114 450kHz
7101 TEA5757H TEA5759H
AGC
AM FRONTEND
AM MIXER
AM OSC
FM FRONTEND
FM OSC
FM MIXER
PRE-SCALER
MULTI-PLEXER
STABILIZER
CHARGE PUMP
STEREO DECODER
AM IF
FM IF1
FM IF2
AM DET
FM DET
AFC
CONTROL
XTAL OSC
DISCRIMINATOR
PROGR. OUTPUT PORTS
VERSION DETECTION
STEREO
CLOCK
DATA
ENABLE/MPX
VCC
RIGHT
GND
LEFT
to/from
FE-BT-VK-N
ECO6 Sys-non Cenelec 000911

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	☒				
/00 /02 FM/MW		☒	☒		☒
/01 FM/MW		☒		☒	☒
/14 FM-OIRT/MW	☒		☒		☒
/17 FM/AM	☒			☒	☒
/06 FM-Japan/AM				☒	☒

☒ component mounted

LEGEND

ⓟ...for provision only
USA ... for USA version only
E-EU ... for East European version only
J ... for Japanese version only

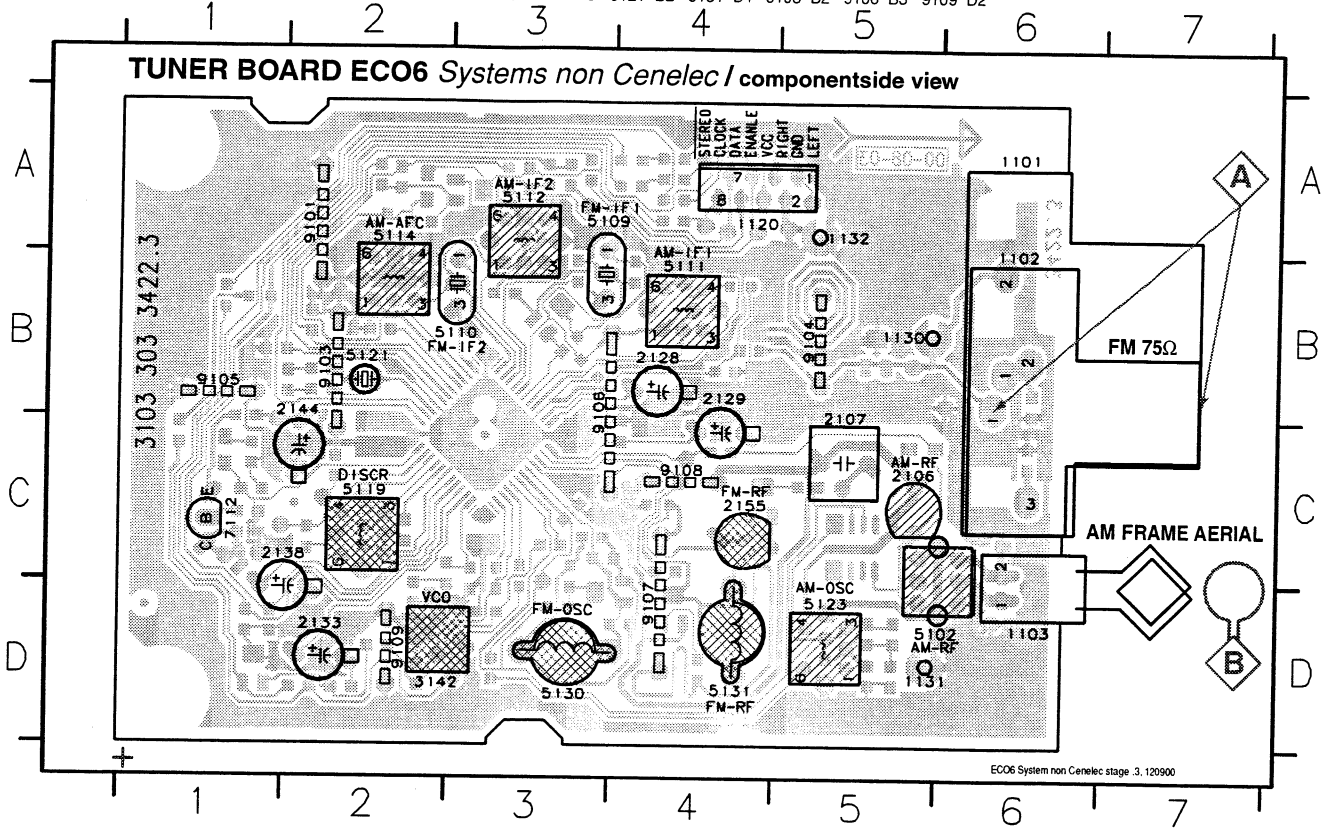
EVM
...V FM mode stereo
...V MW mode
...V LW mode
voltages measured while set is tuned to a strong transmitter

Signal path

- FM
- AM
- MPX (Audio Frequency)
- AF - left/right

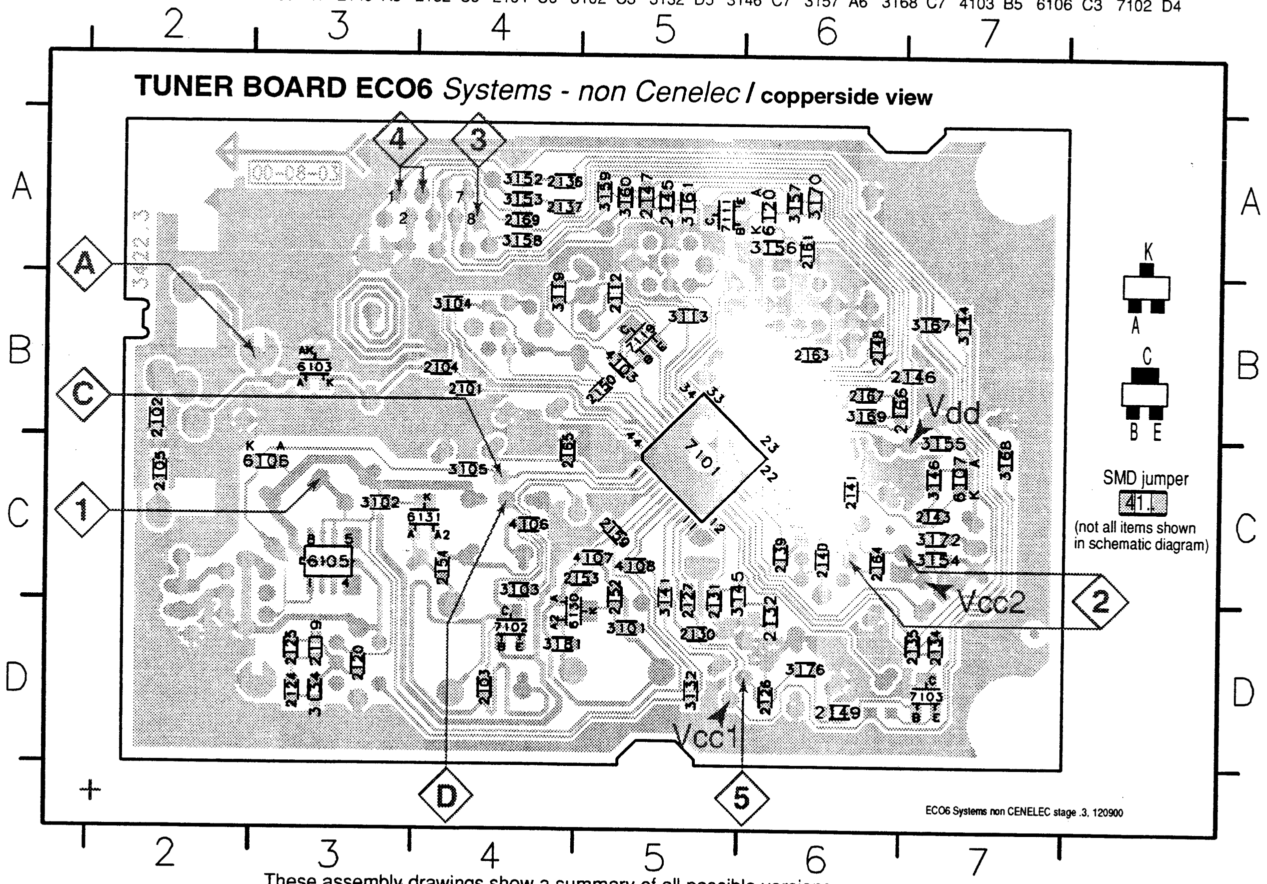
1101	A1
1102	B1
1103	F2
1120	E14
1130	A2
1131	B2
1132	G13
2101	B3
2102	B1
2103	C7
2104	B3
2105	A2
2106	F3
2107	F4
2119	H6
2120	G6
2124	H6
2125	H6
2126	F7
2127	E7
2128	C8
2129	C7
2130	F11
2131	G8
2132	G8
2133	G8
2134	H8
2135	H9
2136	G14
2137	G13
2138	F9
2139	G9
2140	G9
2141	F10
2143	G12
2144	G11
2145	F12
2146	E12
2147	E12
2148	E12
2149	H7
2150	A10
2152	E4
2153	E5
2154	D5
2155	D5
2159	F6
2161	C11
2163	D11
2164	F10
2165	C7
2166	E11
2167	E11
2169	H8
3101	E4
3102	D4
3103	C6
3104	A7
3105	B6
3132	G5
3134	H6
3141	E7
3142	E7
3143	G7
3144	H7
3145	F8
3146	G13
3152	G14
3153	G13
3154	G13
3155	G11
3156	C12
3157	C12
3158	E13
3159	D13
3160	D12
3161	D13
3167	F12
3168	F11
3169	E11
3170	C12
3172	G12
3176	G7
3181	E6
5102	F2
5109	B9
5110	B10
5111	A8
5112	A11
5114	B11
5119	G9
5121	E11
5123	G5
5130	E5
5131	C6
6103	B2
6105-1	F3
6105-2	G5
6106	C3
6107	G13
6120	C13
6130	E5
6131	D5
7101	C8
7102	C6
7103	H7
7111	C13
7112	G12
T102	B2
T103	B2
T105	F2
T106	F2
T109	B6
T110	F5
T111	F4
T112	F7
T113	A8
T114	B10
T115	A8
T116	F10
T117	G13
T118	G11
T120	F13
T121	F13
T122	F13
T123	E13
T124	G14
T125	F14
T126	F13
T127	F13
T128	D7
T140	F11
T141	F10
T142	F10

1101	A6	1120	A4	1132	A5	2128	C4	2138	C2	3142	D2	5110	B3	5114	A2	5123	D5	7112	C1	9104	B5	9107	D4
1102	B6	1130	B5	2106	C5	2129	B4	2144	B2	5102	D6	5111	B4	5119	C2	5130	D3	9101	A2	9105	B1	9108	C4
1103	D6	1131	D5	2107	B5	2133	D2	2155	C4	5109	A3	5112	A3	5121	B2	5131	D4	9103	B2	9106	B3	9109	D2


TUNER BOARD ECO6 *Systems non Cenelec* / **componentside view**

1
2
3
4
5
6
7
A
B
C
D
STEREO
CLOCK
DATA
ENABLE
VCC
RIGHT
GND
LEFT
1101
1102
1103
1120
1130
1131
1132
AM-IF2 5112
FM-IF1 5109
AM-AFC 5114
AM-IF1 5111
5110 FM-IF2
9101
9103
9104
9105
9106
9107
9108
9109
5121
2128
2129
2144
2138
2133
2107
AM-RF 2106
FM-RF 2155
DISCR 5119
7112
VCO
FM-OSC
5130
3142
5131 FM-RF
AM-OSC 5123
5102 AM-RF
FM 75Ω
AM FRAME AERIAL
3103 303 3422.3
ECO6 System non Cenelec stage .3. 120900

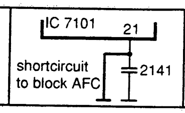
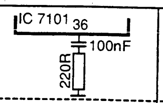
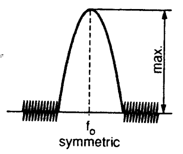
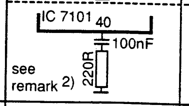
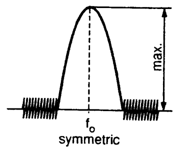
2101	B4	2119	D3	2130	D5	2137	A4	2146	B7	2153	C5	2165	C4	3103	C4	3134	D3	3152	A4	3158	A4	3169	B6	4106	C4	6107	C7	7103	D7
2102	B1	2120	D3	2131	C5	2139	C6	2147	A5	2154	C4	2166	B6	3104	B4	3141	C5	3153	A4	3159	A5	3170	A6	4107	C5	6120	A6	7111	A5
2103	D4	2124	D3	2132	D6	2140	C6	2148	B6	2159	C5	2167	B6	3105	C4	3143	D6	3154	C7	3160	A5	3172	C7	4108	C5	6130	D4	7119	B5
2104	B4	2125	D3	2134	D7	2141	C6	2149	D6	2161	A6	2169	A4	3113	B5	3144	B7	3155	C7	3161	A5	3176	D6	6103	B3	6131	C4		
2105	C1	2126	D6	2135	D7	2143	C7	2150	B5	2163	B6	3101	D5	3119	B5	3145	C5	3156	A6	3167	B7	3181	D4	6105	C3	7101	C5		
2112	B5	2127	C5	2136	A4	2145	A5	2152	C5	2164	C6	3102	C3	3132	D5	3146	C7	3157	A6	3168	C7	4103	B5	6106	C3	7102	D4		


TUNER BOARD ECO6 *Systems - non Cenelec* / **copperside view**

2
3
4
5
6
7
A
B
C
D
4
3
A
C
1
D
5
2
7101
Vdd
Vcc2
Vcc1
6103
6105
6106
7102
7103
K
A
C
B E
SMD jumper
4111
(not all items shown in schematic diagram)
ECO6 Systems non CENELEC stage .3. 120900

These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (**ECO6** FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)			108MHz	5130	1	8V ±0.2V
			87.5MHz (65.81MHz)	check		4.3V ±0.5V (1.2V ±0.5V)
MW FM/AM-version, 10kHz grid 530 - 1700kHz			1700kHz	5123		8V ±0.2V
			530kHz	check		1.1V ±0.4V
FM/MW-version, 9kHz grid 531 - 1602kHz			1602kHz	5123		6.9V ±0.2V
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
MW FM/MW/LW- version, 9kHz grid 531 - 1602kHz			1602kHz	5123		8V ±0.2V
			531kHz	check		1.1V ±0.4V
FM IF						
FM	10.7MHz, 45mV continuous wave	D	 IC 7101 21 shortcircuit to block AFC 2141	5119	2	0 ± 3 mV DC
FM RF						
FM 87.5 - 108MHz (65.81 - 74, 87.5 - 108MHz)	108MHz	A mod=1kHz Δf=±22.5kHz	108MHz	2155	4	MAX
	87.5MHz (65.81MHz)		87.5MHz (65.81MHz)	5131		
VCO						
FM	98MHz, 1mV continuous wave	A	98MHz	3142	3	152kHz ±1kHz [1]
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	C Δf=±10kHz V_{RF} = 0.5mV (as low as possible)	 IC 7101 36 100nF 220R	5111	5	 max. f_o symmetric
			 IC 7101 40 100nF 220R see remark [2]	5112		
AM AFC **MW**		C continuous wave V_{RF} = 2mV		5114	2	0 ± 2 mV DC
AM RF [3]						
MW [4] FM/MW/LW- and FM/MW-version (9kHz grid) 531 - 1602kHz	1494kHz	B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	5	 max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		
MW FM/AM-version, 10kHz grid 530 - 1700kHz	1500kHz		1500kHz	2106		
	560kHz		560kHz	5102		

ECO6, Sys + PA with frame aerial, 070799

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

[1] If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

[2] RC network serves for damping the IF-filter while adjusting the other one.

[3] For AM RF adjustments the original frame antenna has to be used !

[4] MW has to be aligned before LW.

↕ Repeat

lectrical Partslist *ECO6* *SYSTEMS NON-CENELEC*

SCELLANEOUS

01	2422 015 19376	SOCKET 2P CLICKFIT	USA only
02	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
03	4822 265 31184	JST CONNECTOR 2 POLE	
20	4822 265 11515	FFC SOCKET, 8P	

APACITORS

01 ©	4822 126 13692	47pF	1%	63V	
02 ©	4822 126 13838	100nF	10%	50V	not USA
03 ©	5322 122 31647	1nF	10%	63V	
04 ©	5322 122 32531	100pF	5%	50V	
05 ©	4822 126 13838	100nF	10%	50V	USA only
06	2020 800 00191	3-11pF TRIMCAP.,N450			
07	4822 121 51319	1µF	20%	50V	
120 ©	4822 126 13689	18pF	1%	63V	
124 ©	5322 122 32654	22nF	10%	63V	
125 ©	2020 552 96199	560pF	1%	50V	
126 ©	5322 122 31863	330pF	5%	50V	
127 ©	4822 126 14076	220nF	20%	25V	
128	4822 124 40248	10µF	20%	63V	
129	4822 124 41584	100µF	20%	10V	
130 ©	5322 122 32654	22nF	10%	63V	
131 ©	4822 126 13482	470nF	20%	16V	
132 ©	4822 126 13482	470nF	20%	16V	
133	4822 124 21913	1µF	20%	63V	
134 ©	4822 126 13188	15nF	5%	63V	not USA
134 ©	5322 122 32654	22nF	10%	63V	USA only
135 ©	4822 126 13188	15nF	5%	63V	not USA
135 ©	5322 122 32654	22nF	10%	63V	USA only
136 ©	4822 126 14076	220nF	20%	25V	
137 ©	4822 126 14076	220nF	20%	25V	
138	4822 124 22652	2,2µF	20%	50V	
139 ©	4822 126 14236	15pF	5%	50V	
140 ©	4822 126 13695	82pF	1%	63V	
141 ©	4822 126 13838	100nF	10%	50V	
143 ©	4822 126 14076	220nF	20%	25V	
144	4822 124 21913	1µF	20%	63V	
145 ©	4822 122 33575	220pF	5%	50V	
146 ©	4822 122 33575	220pF	5%	50V	
147 ©	4822 122 33575	220pF	5%	50V	
148 ©	4822 122 33127	2,2nF	10%	63V	
149 ©	5322 122 32659	33pF	5%	50V	RDS only
150 ©	4822 126 13838	100nF	10%	50V	
152 ©	4822 126 12105	33nF	5%	63V	not for East Europe
152 ©	5322 116 80853	560pF	5%	63V	for East Europe only
153 ©	4822 126 13486	15pF	2%	63V	not for East Europe
153 ©	4822 122 33926	12pF	2%	50V	for East Europe only
155	2020 800 00191	3-11pF TRIMCAP.,N450			
159 ©	5322 122 32659	33pF	5%	50V	
164 ©	4822 126 13482	470nF	20%	16V	
165 ©	4822 126 13838	100nF	10%	50V	
166 ©	5322 122 31647	1nF	10%	63V	
167 ©	4822 122 33926	12pF	5%	50V	
169 ©	4822 122 33127	2,2nF	10%	63V	RDS only

ESISTORS

101 ©	4822 051 20333	33kΩ	5%	0,1W
102 ©	4822 117 10837	100kΩ	1%	0,1W
103 ©	4822 051 20822	8,2kΩ	5%	0,1W
104 ©	4822 117 13577	330Ω	1%	0,1W
105 ©	4822 117 11503	220Ω	5%	0,1W
132 ©	4822 051 20479	47Ω	5%	0,1W
134 ©	4822 051 20223	22kΩ	5%	0,1W
141 ©	4822 117 11148	56kΩ	1%	0,1W
142	4822 100 12159	TRIMPOT. 100kΩ		

RESISTORS

3143 ©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144 ©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145©	4822 117 11449	2,2kΩ	1%	0,1W	
3146 ©	4822 051 20229	22Ω	5%	0,1W	
3152 ©	4822 051 20471	470Ω	5%	0,1W	
3153 ©	4822 051 20471	470Ω	5%	0,1W	
3154 ©	4822 117 13577	330Ω	1%	0,1W	
3155 ©	4822 117 11503	220Ω	5%	0,1W	
3156 ©	4822 117 10837	100kΩ	1%	0,1W	
3157 ©	4822 117 10837	100kΩ	1%	0,1W	
3158 ©	4822 051 20471	470Ω	5%	0,1W	
3159 ©	4822 051 20471	470Ω	5%	0,1W	
3160 ©	4822 051 20471	470Ω	5%	0,1W	
3161 ©	4822 051 20223	22kΩ	5%	0,1W	
3167 ©	4822 051 20121	120Ω	5%	0,1W	
3168 ©	4822 051 20121	120Ω	5%	0,1W	
3169 ©	4822 051 20154	150kΩ	5%	0,1W	
3170 ©	4822 117 10837	100kΩ	1%	0,1W	
3172 ©	4822 051 20562	5,6kΩ	5%	0,1W	
3176 ©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3181 ©	4822 051 10102	1kΩ	2%	0,25W	
4103 ©	4822 051 20008	CHIP JUMPER 0805			
4106 ©	4822 051 20008	CHIP JUMPER 0805			
4107 ©	4822 051 20008	CHIP JUMPER 0805			
4108 ©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW
5109	4822 242 70665	FM-IF FILTER 10,7MHz
5110	4822 242 70665	FM-IF FILTER 10,7MHz
5111	2422 549 44023	AM-IF FILTER 450kHz
5112	4822 157 70302	AM-IF FILTER 450kHz
5114	4822 157 70302	AM-IF FILTER 450kHz
5119	4822 157 11443	DISCRIMINATOR COIL
5121	4822 242 10261	QUARTZ 75kHz
5123	2422 549 44108	RF-COIL, AM-OSCILLATOR
5130	4822 157 11843	RF COIL 1,5 TURNS
5131	4822 157 11843	RF COIL 1,5 TURNS

DIODES

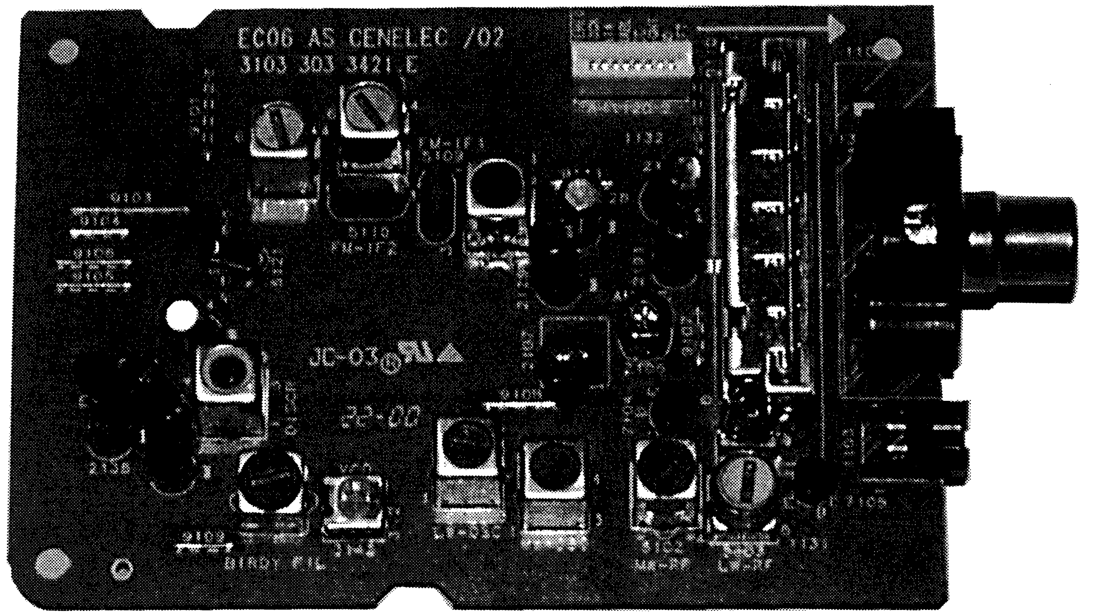
6103 ©	5322 130 34337	BAV99
6105 ©	4822 130 83075	HN1V02H
6106 ©	4822 130 83757	BAS216
6107 ©	9340 386 90115	BZX284-C11
6120 ©	4822 130 83757	BAS216
6130 ©	4822 130 82833	1SV228
6131 ©	4822 130 82833	1SV228

TRANSISTORS

7102	4822 130 42131	BF550	
7103 ©	5322 130 42756	BC857C	RDS only
7111 ©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	

INTEGRATED CIRCUITS

7101 ©	9351 740 80557	TEA5757H/V1, RADIO IC


ECO6 AS CENELEC /02
3103 303 3421.E

ECO6 Tuner Board

version: ***SYSTEMS CENELEC***

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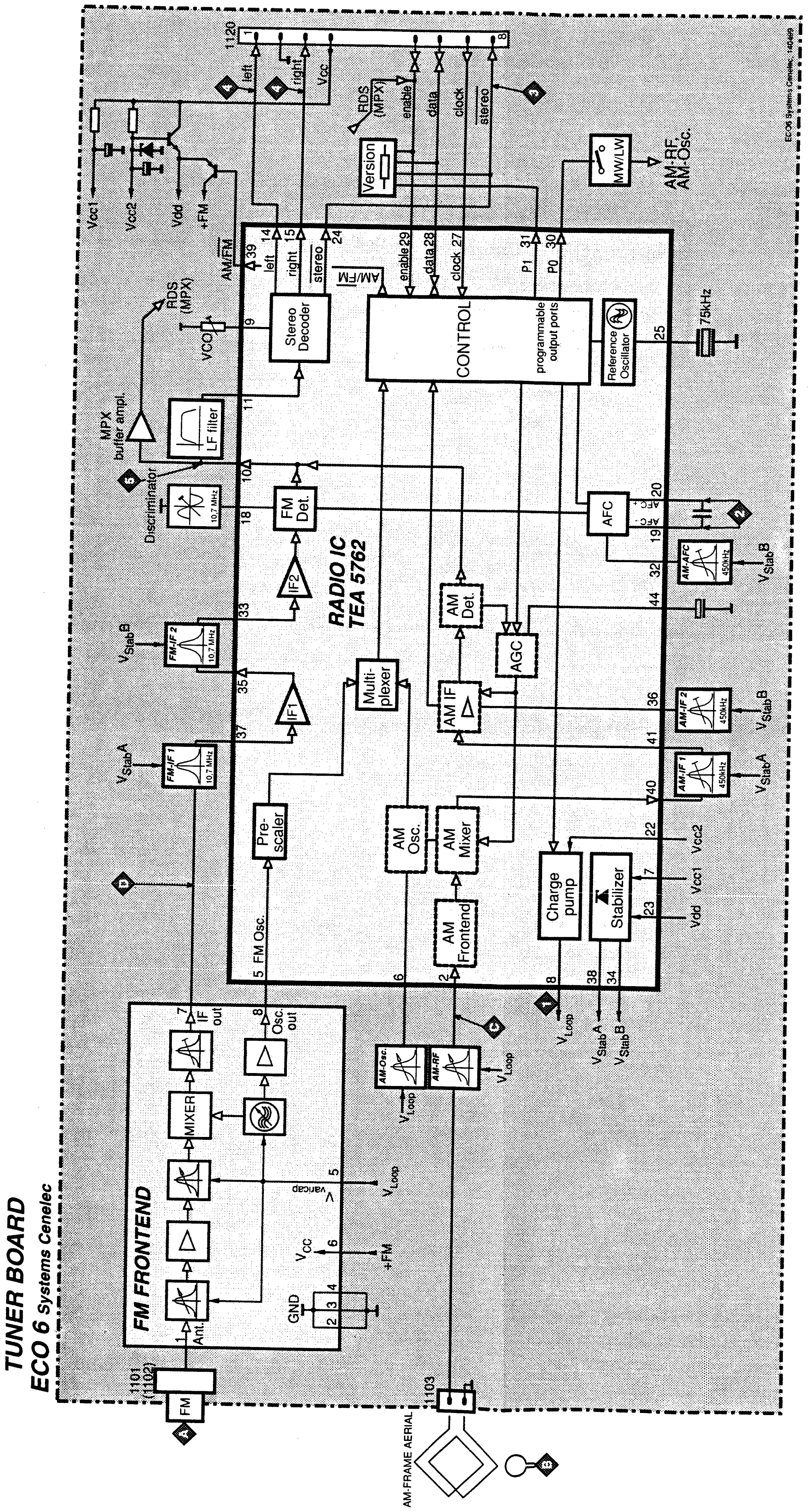
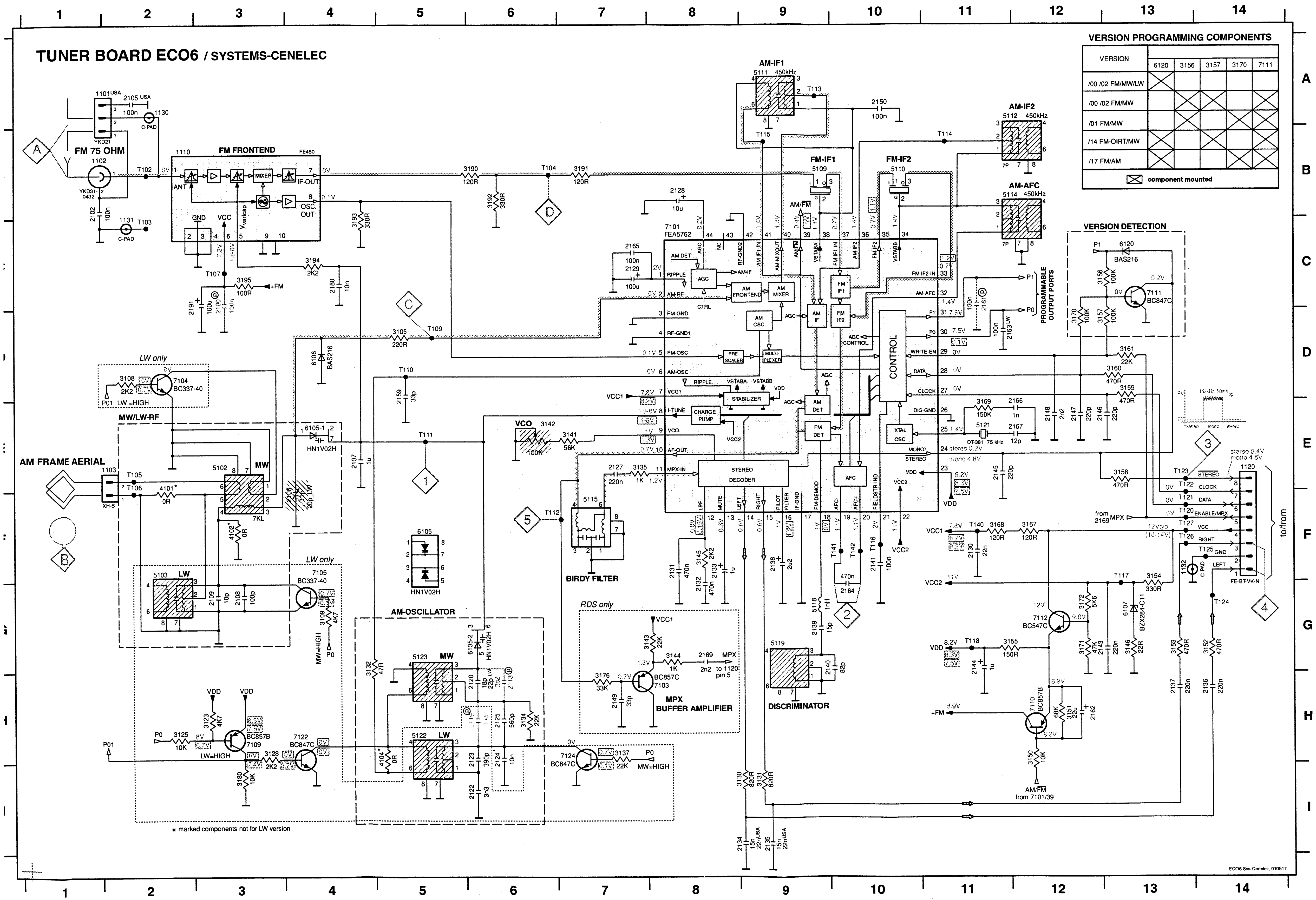
Electrical Partslist...7B-4

BLOCK DIAGRAM


TUNER BOARD
ECO 6 Systems Cenelec
RADIO IC
TEA 5762
FM FRONTEND
Stereo Decoder
CONTROL
programmable output ports
Reference Oscillator
75kHz
LF filter
MPX buffer ampl.
Discriminator
FM Det.
IF2
IF1
FM-IF 1
FM-IF 2
Multi-plexer
AM Det.
AGC
AM IF
AM Osc.
AM Mixer
AM Frontend
Pre-scaler
Charge pump
Stabilizer
AFC
MW/LW
AM-RF, AM-Osc.
Version
RDS (MPX)
VCO
MIXER
GND
Vcc
+FM
V_Loop
V_StabA
V_StabB
Vcc1
Vcc2
Vdd
left
right
stereo
enable
data
clock
P1
P0
AM/FM
1120
1101 (1102)
1103
FM
AM-FRAME AERIAL

TUNER BOARD ECO6 / SYSTEMS-CENELEC


1
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5
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7
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9
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11
12
13
14
A
B
C
D
E
F
G
H
I
FM 75 OHM
1101USA
YKD21
1102
YKD01-12 0432
1110
FM FRONTEND
FE450
ANT
MIXER
IF-OUT
OSC OUT
GND
VCC
Varicap
T102
T103
T104
T107
3190 120R
3191 120R
3192 330R
3193 330R
3194 2K2
3195 100R
+FM
AM-IF1
5111 450kHz
T113
T115
T114
2150 100n
AM-IF2
5112 450kHz
AM-AFC
5114 450kHz
FM-IF1
5109
FM-IF2
5110
AM/FM
7101
TEA5762
AM DET
AGC
RIPPLE
AM-RF
FM-GND
RF-GND1
FM-OSC
AM-OSC
VCC1
I-TUNE
VCO
AF-OUT
MPX-IN
AM FRONTEND
AM MIXER
AM OSC
PRE-SCALER
MULTI-PLEXER
STABILIZER
CHARGE PUMP
STEREO DECODER
AM IF
FM IF1
FM IF2
AM DET
FM DET
AFC
XTAL OSC
CONTROL
AGC CONTROL
WRITE-EN
DATA
CLOCK
DIG-GND
MONO STEREO
FM-IF2-IN
AM-AFC
P1
P0
PROGRAMMABLE OUTPUT PORTS
DT-381 75 kHz
5121
VERSION DETECTION
6120
BAS216
7111
BC847C
3156 100K
3157 100K
3170 100K
3161 22K
3160 470R
3159 470R
3158 470R
LW only
7104
BC337-40
3108 2K2
P01 LW =HIGH
MW/LW-RF
6105-1
HN1V02H
AM FRAME AERIAL
1103
XH-S
T105
T106
4101* 0R
5102
MW
7KL
4102* 0R
5103
LW
7105
BC337-40
3109 4K7
MW=HIGH
P0
6105
HN1V02H
AM-OSCILLATOR
5123
MW
5122
LW
6105-2
HN1V02H
3132 47R
4104* 0R
VCO
3142
3141 56K
VDD
3123 4K7
7109
BC857B
3125 10K
LW=HIGH
3128 2K2
7122
BC847C
3180 10K
7124
BC847C
3137 22K
MW=HIGH
5115
BIRDY FILTER
RDS only
VCC1
3143 22K
3144 1K
2169 2n2
MPX to 1120 pin 5
3176 33K
7103
BC857C
MPX BUFFER AMPLIFIER
5119
DISCRIMINATOR
5118 1nH
2164
T141
T142
T116
T140
3168 120R
3167 120R
VCC2
T117
3154 330R
7112
BC547C
3172 5K6
6107
BZX284-C11
3146 22R
T118
3155 150R
7110
BC857B
+FM
3150 10K
AM/FM from 7101/39
3153 470R
3152 470R
1120
FE-BT-VK-N
STEREO
CLOCK
DATA
ENABLE/MPX
VCC
RIGHT
GND
LEFT
to/from
from 2169 MPX
T123
T122
T121
T120
T127
T126
T125
T124
3130 820R
3131 820R
2134
2135
ECO6 Sys-Cenelec 010517

■ marked components not for LW version

VERSION PROGRAMMING COMPONENTS

VERSION	6120	3156	3157	3170	7111
/00 /02 FM/MW/LW	☒				
/00 /02 FM/MW		☒	☒		☒
/01 FM/MW		☒		☒	☒
/14 FM-OIRT/MW	☒		☒		☒
/17 FM/AM	☒			☒	☒

☒ component mounted

1101	A2
1102	B1
1103	E2
1110	B2
1120	E14
1130	A2
1131	C2
1132	F13
2102	B1
2105	A2
2106	E3
2107	E4
2108	G3
2109	G3
2118	H6
2119	H6
2120	H6
2122	I6
2123	H6
2124	H6
2125	H6
2127	E7
2128	B8
2129	C7
2130	F11
2131	F8
2132	F8
2133	F8
2134	I8
2135	I9
2136	H14
2137	H13
2138	F9
2139	G9
2140	G9
2141	F10
2143	G12
2144	G11
2145	E11
2146	E12
2147	E12
2148	E12
2149	H7
2150	A10
2159	D5
2161	C11
2162	H12
2163	D11
2164	G10
2165	C7
2166	E11
2167	E11
2169	G8
2180	C4
2190	C3
2191	C3
3105	D5
3108	D2
3109	G4
3123	H3
3125	H2
3128	H3
3130	I9
3131	I9
3132	G4
3134	H6
3135	E7
3137	H7
3141	E7
3142	E6
3143	G7
3144	G8
3145	F8
3146	G13
3150	H12
3151	H12
3152	G14
3153	G13
3154	F13
3155	G12
3156	C12
3157	D12
3158	E13
3159	D13
3160	D13
3161	D13
3167	F12
3168	F11
3169	E11
3170	D12
3171	G12
3172	G12
3176	H7
3180	I3
3190	B6
3191	B7
3192	B6
3193	B4
3194	C4
3195	C3
4101	E2
4102	F3
4104	H5
5102	E3
5103	F2
5109	B9
5110	B10
5111	A9
5112	A11
5114	B11
5115	E7
5118	G9
5119	G9
5121	E11
5122	H5
5123	G5
6105-1	E4
6105-2	G6
6106	D4
6107	G13
6120	C13
7101	C8
7103	H8
7104	D2
7105	F4
7109	H3
7110	H12
7111	C13
7112	G12
7122	H4
7124	H7
T102	B2
T103	B2
T104	B6
T105	E2
T106	E2
T107	C3
T109	D5
T110	D5
T111	E5
T112	F7
T113	A9
T114	B11
T116	F10
T117	F13
T118	G11
T120	F13
T121	F13
T122	E13
T123	E13
T124	G14
T125	F14
T126	F13
T127	F13
T140	F11
T141	F10
T142	F10

LEGEND

* ... only assembled in FM/AM-version
ⓟ ...for provision only
USA ... for USA version only
LW ... for LW version only

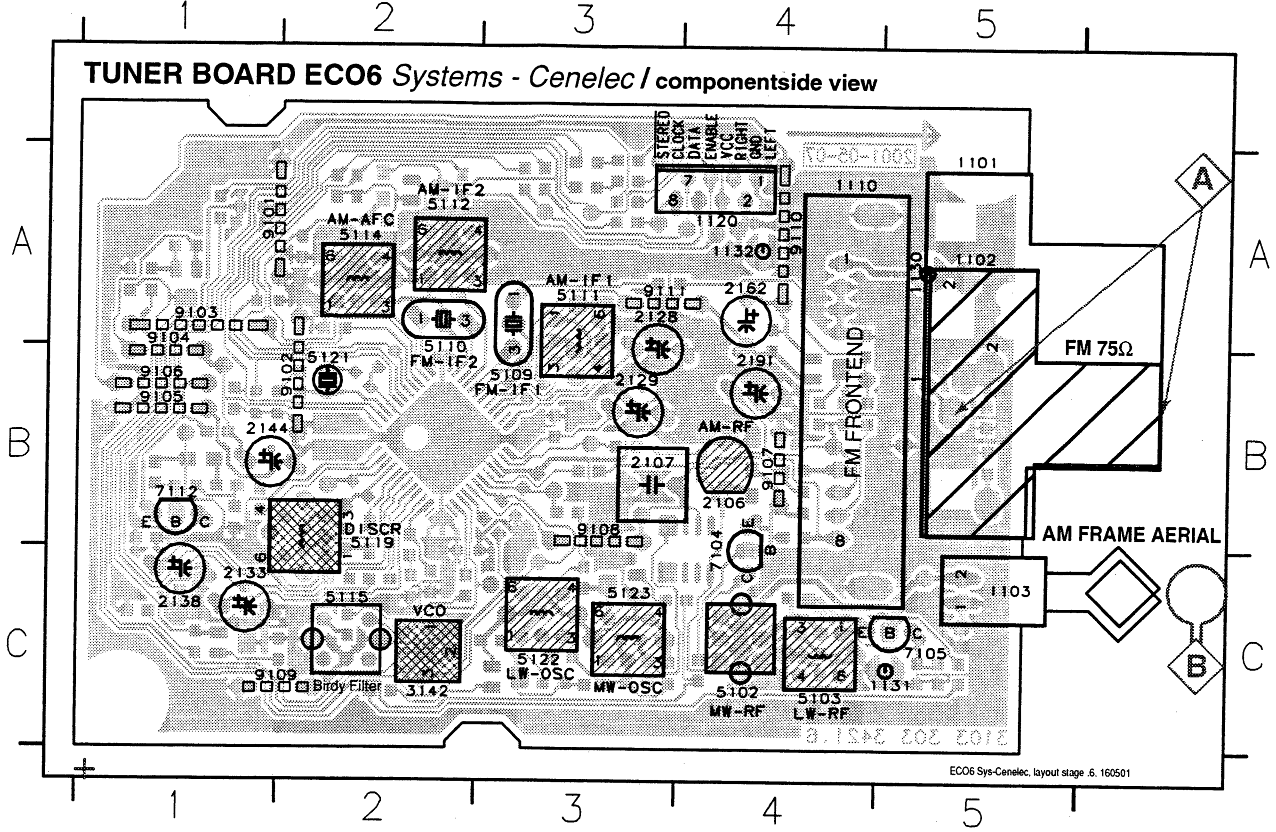
SMD jumper
41xx
0R

EVM

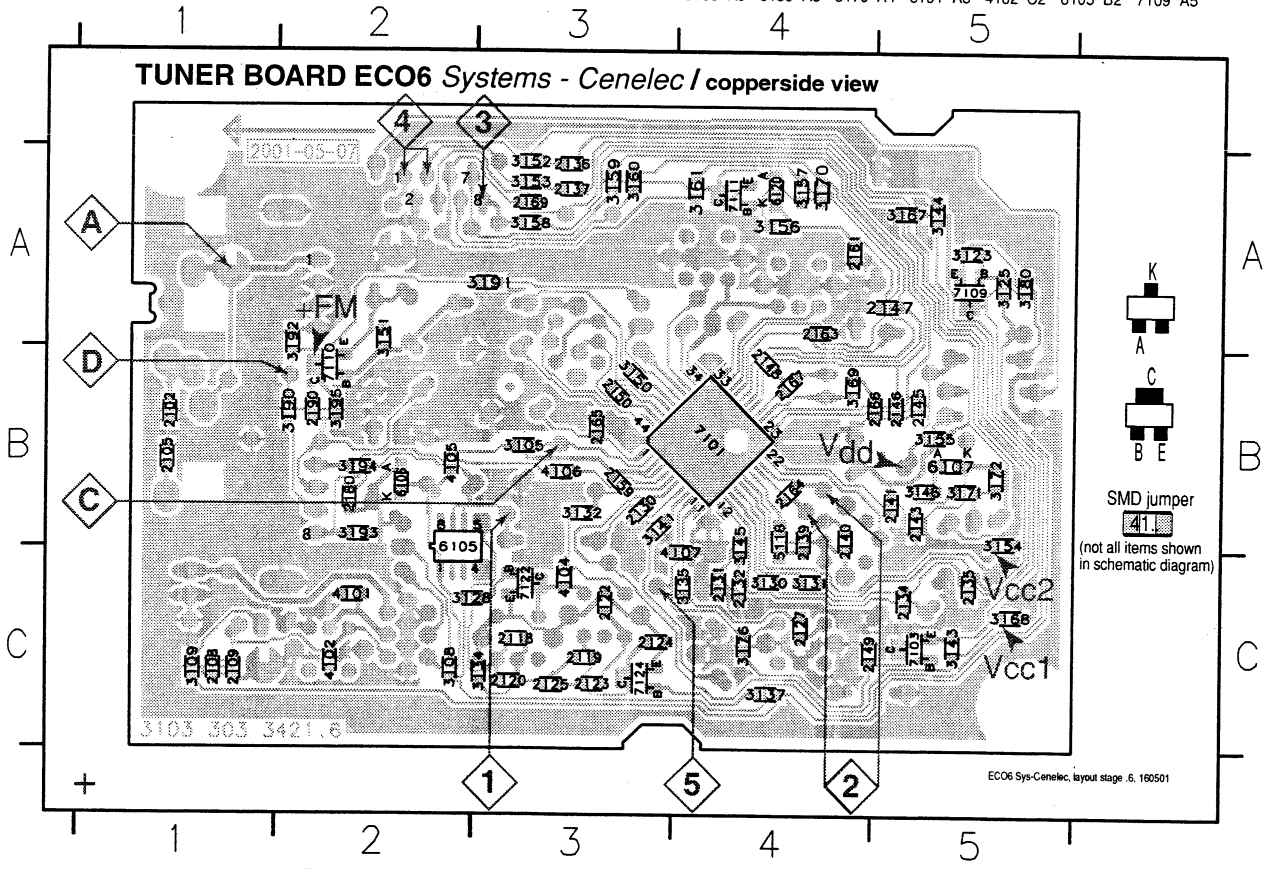
...V FM mode stereo
▭ ...V MW mode
▭ ...V LW mode
voltages measured while set is tuned to a strong transmitter

Signal path
FM
AM
MPX (Audio Frequency)
⇨ AF - left/right

1101 B5	1110 B4	1131 C5	2107 B3	2133 C1	2162 A4	5102 C4	5110 A2	5114 A2	5121 B2	7104 C4	9101 A2	9104 B1	9107 B4	9110 A4
1102 B5	1120 A4	1132 A4	2128 A3	2138 B1	2191 B4	5103 C4	5111 A3	5115 C2	5122 C3	7105 C5	9102 B2	9105 B1	9108 B3	9111 A3
1103 C5	1130 A5	2106 B4	2129 B3	2144 B1	3142 C2	5109 B3	5112 A2	5119 B2	5123 C3	7112 B1	9103 A1	9106 B1	9109 C2	

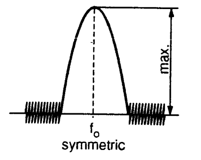
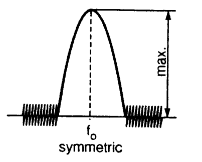

1
2
3
4
5
A
B
C
TUNER BOARD ECO6 Systems - Cenelec / componentside view
STEREO
CLOCK
DATA
ENABLE
VCC
RIGHT
GND
LEFT
1101
1110
1120
1132
1102
1103
1131
AM-IF2 5112
AM-AFC 5114
AM-IF1 5111
5110 FM-IF2
5109 FM-IF1
5121
9101
9102
9103
9104
9106
9105
9107
9108
9109
9110
9111
2128
2162
2191
2129
2144
2107
2106
AM-RF
7112
E B C
DISCR 5119
2133
2138
5115
VCO
3142
Birdy Filter
5122 LW-OSC
MW-OSC
5123
7104
5102 MW-RF
5103 LW-RF
7105
FM FRONTEND
FM 75Ω
AM FRAME AERIAL
A
B
ECO6 Sys-Cenelec, layout stage .6. 160501

2102 B1	2120 C3	2130 B3	2137 A3	2146 B5	2161 A4	2169 A3	3123 A5	3134 C3	3145 C4	3154 B5	3160 A3	3171 B5	3192 A2	4104 C3	6106 B2	7110 B2
2105 B1	2122 C3	2131 C4	2139 B4	2147 A5	2163 A4	2180 B2	3125 A5	3135 C4	3146 B5	3155 B5	3161 A4	3172 B5	3193 B2	4105 B2	6107 B5	7111 A4
2108 C1	2123 C3	2132 C4	2140 B4	2148 B4	2164 B4	2190 B2	3128 C2	3137 C4	3150 B3	3156 A4	3167 A5	3176 C4	3194 B2	4106 B3	6120 A4	7122 C3
2109 C1	2124 C3	2134 C5	2141 B5	2149 C4	2165 B3	3105 B3	3130 C4	3141 B3	3151 A2	3157 A4	3168 C5	3180 A5	3195 B2	4107 C4	7101 B4	7124 C3
2118 C3	2125 C3	2135 C5	2143 B5	2150 B3	2166 B5	3108 C2	3131 C4	3143 C5	3152 A3	3158 A3	3169 B4	3190 B2	4101 C2	5118 C4	7103 C5	
2119 C3	2127 C4	2136 A3	2145 B5	2159 B3	2167 B4	3109 C1	3132 B3	3144 A5	3153 A3	3159 A3	3170 A4	3191 A3	4102 C2	6105 B2	7109 A5	


1
2
3
4
5
A
B
C
TUNER BOARD ECO6 Systems - Cenelec / copperside view
4
3
A
D
C
1
5
2
+FM
Vdd
Vcc2
Vcc1
7101
6105
4101
K
A
C
B E
SMD jumper
4111
(not all items shown in schematic diagram)
ECO6 Sys-Cenelec, layout stage .6. 160501

These assembly drawings show a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

TUNER ADJUSTMENT TABLE (**ECO6 Cenelec** FM/MW - and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Tuned to	Adjust	Output	Scope/Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50kHz grid)			108MHz	check	◇1	8V ±1.2V
			87.5MHz	check		1.6V ±0.5V
MW 531 - 1602kHz (9kHz grid)			1602kHz	5123		8V ±0.2V 3-band 6.9V ±0.2V 2-band
			531kHz	check		1.1V ±0.4V
LW 153 - 279kHz (3kHz grid)			279kHz	5122		8V ±0.2V
			153kHz	check		1.1V ±0.4V
FM - IF						
FM	10.7MHz, 45mV continuous wave	◇D	IC 7101 21 shortcircuit to block AFC 2141	5119	◇2	0mV ±3mV
FM - VCO						
FM	98MHz, 1mV continuous wave	◇A	98MHz	3142	◇3	152kHz ±1kHz 1)
FM RF (channel separation)	Note: The FM-frontend unit has already been adjusted by the factory and needs therefore no further adjustments for service purposes.					
FM	98MHz, 1mV 90% Left + 9% pilot mod=1kHz	◇A	98MHz	IF coil inside FM frontend 1110	◇4	right channel min.
AM IF						
MW	450kHz connect pin 6 of IC 7101 (AM Osc.) with 3.3kΩ to Vcc	◇C Δf = ±10kHz V_{RF} = 0.5mV (as low as possible)	IC 7101 36 100nF 220R	5111	◇5	 max. f_o symmetric
			IC 7101 40 100nF 220R see remark 2)	5112		
AM AFC **MW**		◇C continuous wave V_{RF} = 2mV		5114	◇2	0mV ±2mV
AM RF 3)						
MW	1494kHz	◇B Δf = ±30kHz V_{RF} as low as possible	1494kHz	2106	◇5	 max. f_o symmetric
	558kHz		558kHz	5102		
LW	198kHz		198kHz	5103		

ECO6 Sys Cenelec, 190599

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used!
MW has to be aligned before LW.

↕ Repeat

lectrical Partslist *ECO6* *SYSTEMS-CENELEC*

ISCELLANEOUS

01	2422 015 19376	SOCKET CLICKFIT 2P	USA only
02	4822 267 10283	SOCKET COAX, IEC 75Ω	not USA
03	4822 265 31184	JST CONNECTOR, 2 POLE	
10	2422 542 90071	FM FRONTEND	
20	4822 265 11515	FFC SOCKET, 8P	

APACITORS

102©	4822 126 13838	100nF	10%	50V	not USA
105©	4822 126 13838	100nF	10%	50V	USA only
106	2020 800 00204	TRIMCAP. 4,2 - 20pF, N750			LW only
106	2020 800 00191	TRIMCAP. 3 - 11pF, N450			FM/AM only
107	4822 121 51319	1µF	20%	50V	
108©	5322 122 32531	100pF	5%	50V	LW only
109©	5322 122 32448	10pF	5%	50V	LW only
120©	4822 126 13689	18pF	1%	63V	FM/AM only
120©	5322 122 32658	22pF	5%	50V	LW only
122©	4822 122 33891	3,3nF	10%	63V	LW only
123©	2020 552 93494	390pF	1%	50V	LW only
124©	4822 122 33177	10nF	20%	50V	FM/AM only
125©	2020 552 96199	560pF	1%	50V	
127©	4822 126 14076	220nF	20%	25V	
128	4822 124 40248	10µF	20%	63V	
129	4822 124 41584	100µF	20%	10V	
130©	5322 122 32654	22nF	10%	63V	
131©	4822 126 13482	470nF	20%	16V	
132©	4822 126 13482	470nF	20%	16V	
133	4822 124 21913	1µF	20%	63V	
134©	3198 017 31530	15nF	10%	50V	not USA
134©	5322 122 32654	22nF	10%	63V	USA only
135©	3198 017 31530	15nF	10%	50V	not USA
135©	3198 017 32230	22nF	10%	25V	USA only
136©	4822 126 14076	220nF	20%	25V	
137©	4822 126 14076	220nF	20%	25V	
138	4822 124 22652	2,2µF	20%	50V	
139©	4822 126 14236	15pF	5%	50V	
140©	4822 126 13695	82pF	1%	63V	
141©	4822 126 13838	100nF	10%	50V	
143©	4822 126 14076	220nF	20%	25V	
144	4822 124 21913	1µF	20%	63V	
145©	4822 122 33575	220pF	5%	50V	
146©	4822 122 33575	220pF	5%	50V	
147©	4822 122 33575	220pF	5%	50V	
148©	4822 122 33127	2,2nF	10%	63V	
149©	5322 122 32659	33pF	5%	50V	RDS only
150©	4822 126 13838	100nF	10%	50V	
159©	5322 122 31151	22µF	20%	50V	
163©	4822 126 13838	100nF	10%	50V	LW only
164©	4822 126 13482	470nF	20%	16V	
165©	4822 126 13838	100nF	10%	50V	
166©	5322 122 31647	1nF	10%	63V	
167©	4822 122 33926	12pF	5%	50V	
169©	4822 122 33127	2,2nF	10%	63V	RDS only
180©	3198 017 31030	10nF	10%	50V	
190©	4822 126 13838	100nF	10%	50V	
191	4822 124 40178	100µF	20%	10V	

ESISTORS

105©	4822 117 11503	220Ω	5%	0,1W	
108©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
109©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
123©	4822 051 20472	4,7kΩ	5%	0,1W	LW only
125©	4822 117 10833	10kΩ	1%	0,1W	LW only

RESISTORS

3128©	4822 117 11449	2,2kΩ	1%	0,1W	LW only
3130©	3198 021 38210	820Ω	5%	0,06W	
3131©	3198 021 38210	820Ω	5%	0,06W	
3132©	4822 051 20479	47Ω	5%	0,1W	
3134©	4822 051 20223	22kΩ	5%	0,1W	
3135©	3198 021 31020	1kΩ	5%	0,06W	
3137©	4822 051 20223	22kΩ	5%	0,1W	LW only
3141©	4822 117 11148	56kΩ	1%	0,1W	
3142	4822 100 12159	TRIMPOT. 100kΩ			
3143©	4822 051 20223	22kΩ	5%	0,1W	RDS only
3144©	4822 051 10102	1kΩ	2%	0,25W	RDS only
3145©	4822 117 11449	2,2kΩ	1%	0,1W	
3146©	4822 051 20229	22Ω	5%	0,1W	
3150©	4822 117 10833	10kΩ	1%	0,1W	
3151©	4822 051 20683	68kΩ	5%	0,1W	
3152©	4822 051 20471	470Ω	5%	0,1W	
3153©	4822 051 20471	470Ω	5%	0,1W	
3154©	4822 117 13577	330Ω	1%	0,1W	
3155©	4822 117 10353	150Ω	5%	0,1W	
3156©	4822 117 10837	100kΩ	1%	0,1W	
3157©	4822 117 10837	100kΩ	1%	0,1W	
3158©	4822 051 20471	470Ω	5%	0,1W	
3159©	4822 051 20471	470Ω	5%	0,1W	
3160©	4822 051 20471	470Ω	5%	0,1W	
3161©	4822 051 20223	22kΩ	5%	0,1W	
3167©	4822 051 20121	120Ω	5%	0,1W	
3168©	4822 051 20121	120Ω	5%	0,1W	
3169©	4822 051 20154	150kΩ	5%	0,1W	
3170©	4822 117 10837	100kΩ	1%	0,1W	
3171©	4822 117 10834	47kΩ	1%	0,1W	
3172©	4822 051 20562	5,6kΩ	5%	0,1W	
3176©	4822 051 20333	33kΩ	5%	0,1W	RDS only
3180©	4822 117 10833	10kΩ	1%	0,1W	LW only
3190©	4822 051 20121	120Ω	5%	0,1W	
3191©	4822 051 20121	120Ω	5%	0,1W	
3192©	4822 117 13577	330Ω	1%	0,1W	
3193©	4822 117 13577	330Ω	1%	0,1W	
3194©	4822 117 11449	2,2kΩ	1%	0,1W	
3195©	4822 051 20101	100Ω	5%	0,1W	
4101©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4102©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4104©	4822 051 20008	CHIP JUMPER 0805			FM/AM only
4105©	4822 051 20008	CHIP JUMPER 0805			
4106©	4822 051 20008	CHIP JUMPER 0805			
4107©	4822 051 20008	CHIP JUMPER 0805			

COILS

5102	4822 157 71634	RF-COIL MW	
5103	2422 549 44107	RF-COIL LW	LW only
5109	4822 157 71639	FM-IF FILTER 10,7MHz	
5110	4822 242 70665	FM-IF FILTER 10,7MHz	
5111	2422 549 44023	AM-IF FILTER 450kHz	
5112	4822 157 70302	AM-IF FILTER 450kHz	
5114	4822 157 70302	AM-IF FILTER 450kHz	
5115	4822 157 71636	ANTI BIRDY FILTER	
5118©	2422 535 95881	100nH	
5119	4822 157 11443	DISCRIMINATOR COIL	
5121	4822 242 10261	QUARTZ 75kHz	
5122	2422 549 44108	RF-COIL, LW-OSCILLATOR	LW only
5123	2422 549 44108	RF-COIL, MW-OSCILLATOR	

DIODES

6105©	4822 130 83075	HN1V02H
6106©	4822 130 83757	BAS216
6107©	9340 386 90115	BZX284-C11
6120©	4822 130 83757	BAS216

TRANSISTORS

7103©	5322 130 42756	BC857C	RDS only
7104	9322 003 64676	TBC337-40	LW only
7105	9322 003 64676	TBC337-40	LW only
7109©	4822 130 60373	BC856B	LW only
7110©	4822 130 60373	BC856B	
7111©	5322 130 42755	BC847C	
7112	4822 130 44503	BC547C	
7122©	5322 130 42755	BC847C	LW only
7124©	5322 130 42755	BC847C	LW only

INTEGRATED CIRCUITS

7101	4822 209 90315	TEA5762H/V1, RADIO IC

PWR303

MODULE UCD 200-250W

Mains pt5 / Reg pt3 / Amp pt2 / Spk pt5 - 17 Nov 03

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Amplifier UCD Board (BTL Master/Slave)

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Speaker UCD Board

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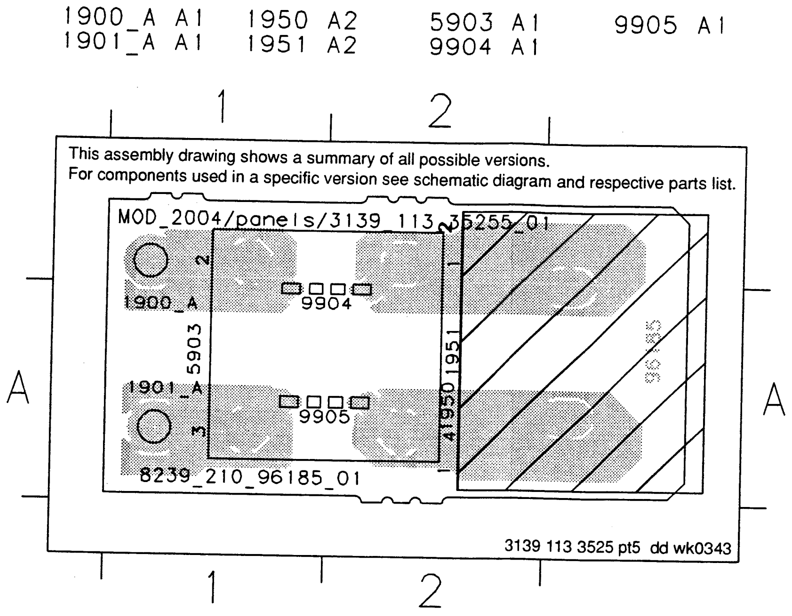
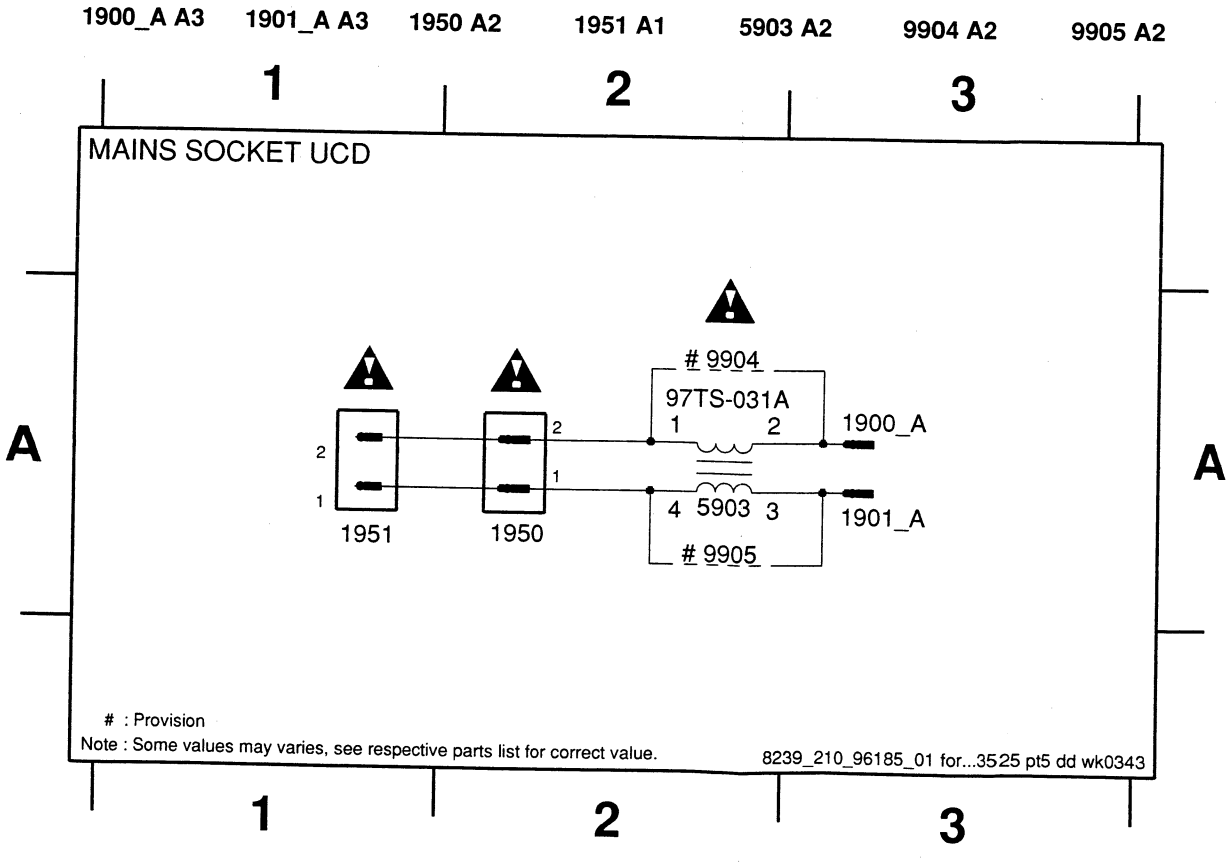
MAINS SOCKET UCD BOARD - COMPONENT LAYOUT


1900_A A1
1901_A A1
1950 A2
1951 A2
5903 A1
9904 A1
9905 A1
1
2
A
A
This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.
MOD_2004/panels/3139_113_35255_01
1900_A
1901_A
5903
9904
9905
1951
1950
8239_210_96185_01
96185
3139 113 3525 pt5 dd wk0343

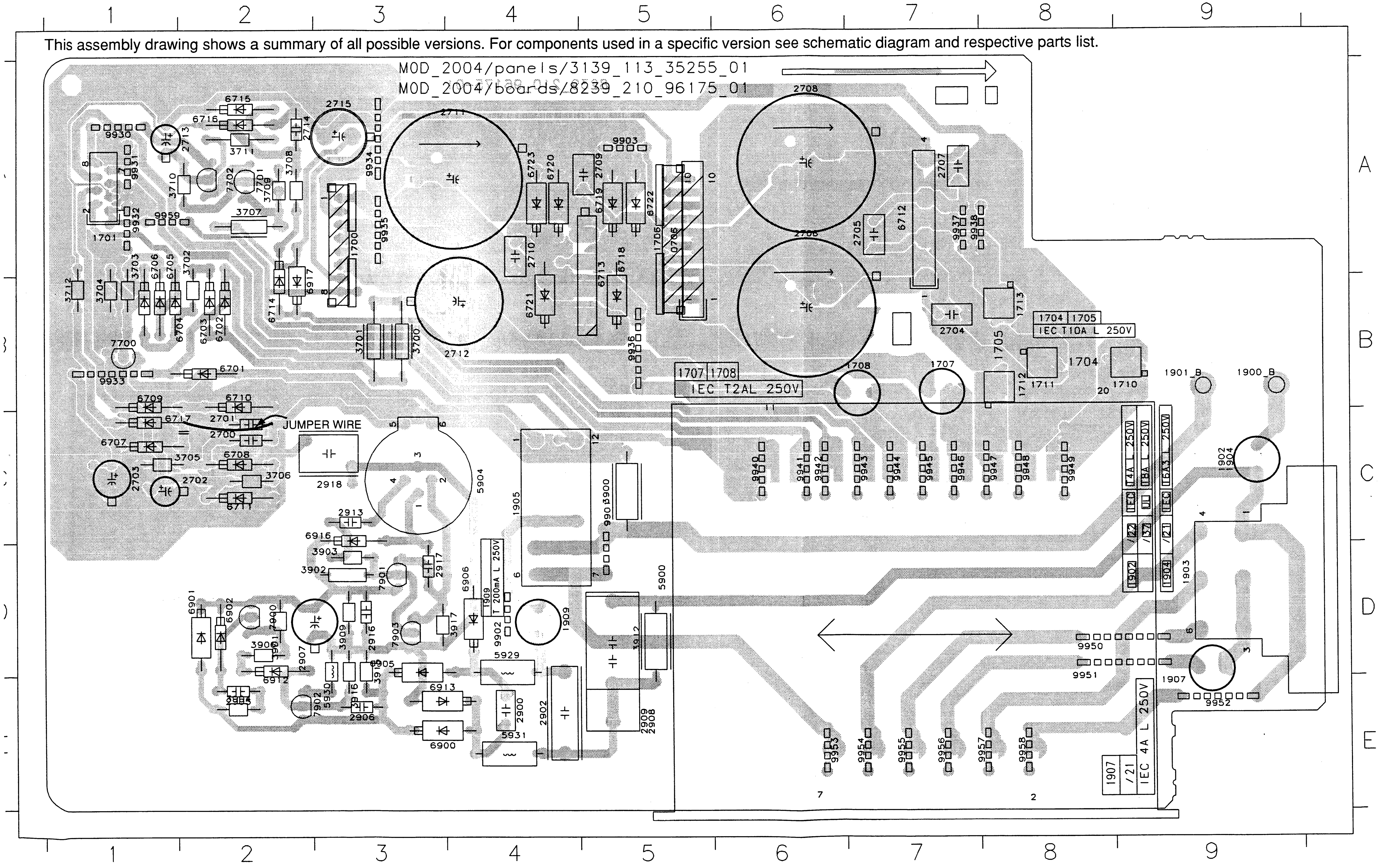
MAINS SOCKET UCD BOARD - CIRCUIT DIAGRAM


1900_A A3
1901_A A3
1950 A2
1951 A1
5903 A2
9904 A2
9905 A2
1
2
3
A
A
MAINS SOCKET UCD
# 9904
97TS-031A
1
2
1900_A
4
5903
3
1901_A
# 9905
1951
1950
2
1
# : Provision
Note : Some values may varies, see respective parts list for correct value.
8239_210_96185_01 for...3525 pt5 dd wk0343

IAINS UCD BOARD - COMPONENT LAYOUT

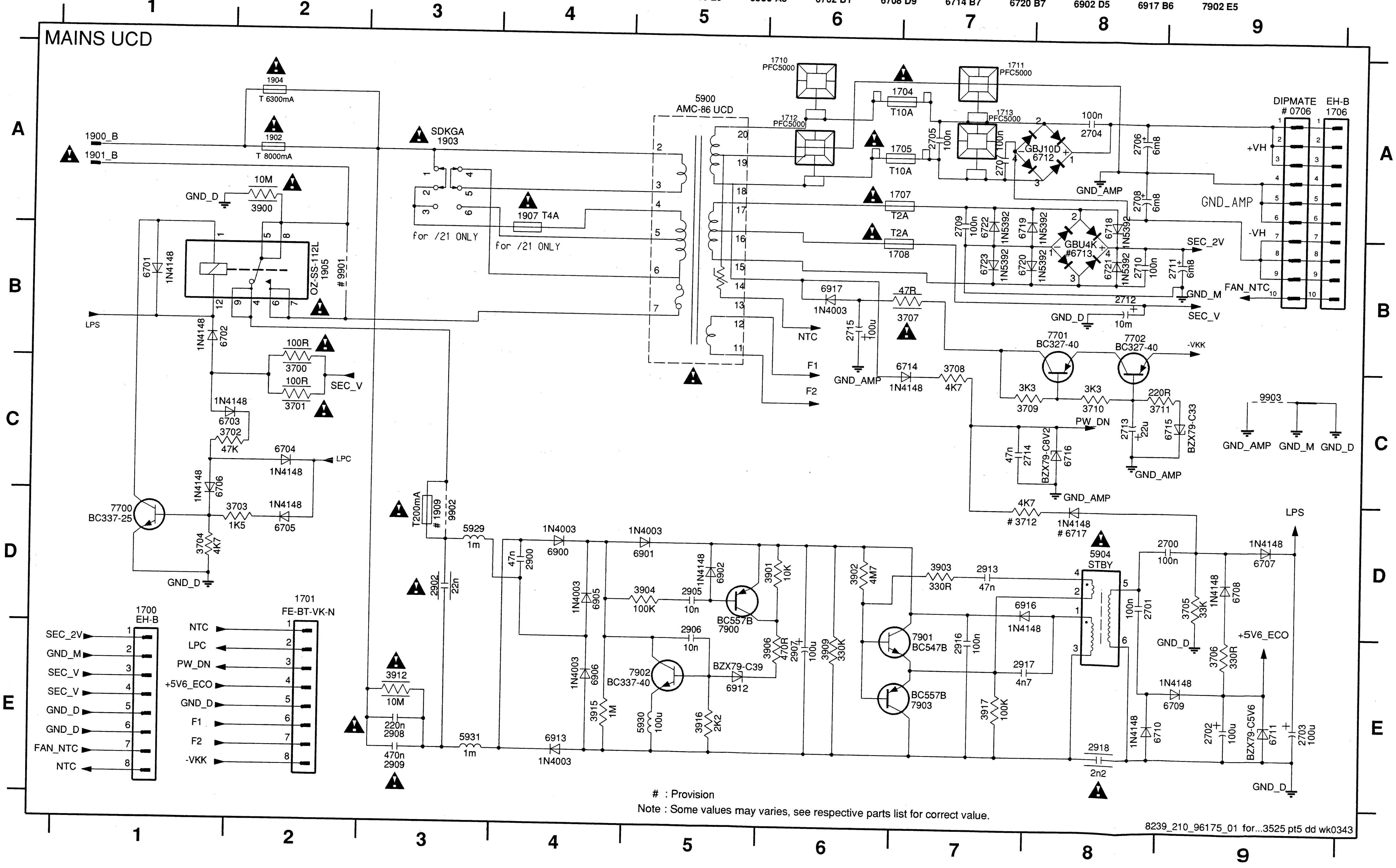
0706	A5
1700	A3
1701	A1
1706	A5
1707	B7
1708	B7
1710	B9
1711	B8
1712	B8
1713	B8
1900_B	B9
1901_B	B9
1902	C9
1903	D9
1904	C9
1905	C4
1907	E9
1909	D4
2700	C2
2701	C2
2702	C2
2703	C1
2704	B7
2705	A7
2706	A6
2707	A7
2708	A6
2709	A5
2710	A4
2711	A4
2712	B4
2713	A2
2714	A2
2715	A3
2900	E4
2902	E4
2905	E2
2906	E3
2907	D2
2908	E5
2909	E5
2913	C3
2916	D3
2917	D3
2918	C3
3700	B3
3701	B3
3702	A2
3703	A1
3704	B1
3705	C2
3706	C2
3707	A2
3708	A2
3709	A2
3710	A1
3711	A2
3712	B1
3900	C5
3901	D2
3902	D3
3903	D3
3904	E2
3906	D2
3909	D3
3912	D5
3915	D3
3916	E3
3917	D4
5900	D5
5904	C4
5929	D4
5930	E3
5931	E4
6701	B2
6702	B2
6703	B2
6704	B2
6705	A1
6706	A1
6707	C1
6708	C2
6709	B1
6710	B2
6711	C2
6712	A7
6713	A5
6714	B2
6715	A2
6716	A2
6717	C2
6718	A5
6719	A5
6720	A4
6721	B4
6722	A5
6723	A4
6900	E3
6901	D2
6902	D2
6905	D3
6906	D4
6912	E2
6913	E3
6916	C3
6917	B2
7700	B1
7701	A2
7702	A2
7900	D2
7901	D3
7902	E3
7903	D3
9901	C5
9902	D4
9903	A5
9930	A1
9931	A1
9932	A1
9933	B1
9934	A3
9935	A3
9936	B5
9937	A7
9938	A7
9940	C6
9941	C6
9942	C6
9943	C7
9944	C7
9945	C7
9946	C7
9947	C8
9948	C8
9949	C8
9950	D8
9951	D8
9952	E9
9953	E6
9954	E7
9955	E7
9956	E7
9957	E7
9958	E8
9959	A1

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.


1
2
3
4
5
6
7
8
9
A
B
C
D
E
MOD_2004/panels/3139_113_35255_01
MOD_2004/boards/8239_210_96175_01
JUMPER WIRE
1707 1708
IEC T2AL 250V
1704 1705
IEC T10A L 250V
1909
T 200mA L 250V
1907
/21
IEC 4A L 250V
1902 /22 IEC 4A L 250V
1903 /37 IEC 3A L 250V
1904 /21 IEC 6A3 L 250V
1900_B
1901_B

MAINS UCD BOARD - CIRCUIT DIAGRAM

0706	A9
1700	E1
1701	D2
1704	A6
1705	A6
1706	A9
1707	A6
1708	B6
1710	A6
1711	A7
1712	A6
1713	A7
1900_B	A1
1901_B	A1
1902	A2
1903	A3
1904	A2
1905	B2
1907	A4
1909	D3
2700	D9
2701	D8
2702	E9
2703	E9
2704	A8
2705	A7
2706	A8
2707	A7
2708	A8
2709	A7
2710	B8
2711	B9
2712	B8
2713	C8
2714	C7
2715	B6
2900	D4
2902	D3
2905	D5
2906	E5
2907	E6
2908	E3
2909	E3
2913	D7
2916	E7
2917	E7
2918	E8
3700	C2
3701	C2
3702	C2
3703	D2
3704	D1
3705	D9
3706	E9
3707	B7
3708	C7
3709	C7
3710	C8
3711	C8
3712	D7
3900	A2
3901	D6
3902	D6
3903	D7
3904	D5
3906	E6
3909	E6
3912	E3
3915	E4
3916	E5
3917	E7
5900	A5
5904	D8
5929	D3
5930	E5
5931	E3
6701	B1
6702	B1
6703	C1
6704	C2
6705	D2
6706	C1
6707	D9
6708	D9
6709	E9
6710	E8
6711	E9
6712	A8
6713	B8
6714	B7
6715	C9
6716	C8
6717	D8
6718	A8
6719	A8
6720	B7
6721	B8
6722	A7
6723	B7
6900	D4
6901	D5
6902	D5
6905	D4
6906	E4
6912	E5
6913	E4
6916	D8
6917	B6
7700	D1
7701	B8
7702	B8
7900	D5
7901	E7
7902	E5
7903	E7
9901	B2
9902	D3
9903	C9



1
2
3
4
5
6
7
8
9
A
B
C
D
E
MAINS UCD
1904
T 6300mA
1902
T 8000mA
1900_B
1901_B
10M
3900
GND_D
SDKGA
1903
1907 T4A
for /21 ONLY
for /21 ONLY
OZ-SS-112L
1905
# 9901
6701
1N4148
6702
1N4148
LPS
100R
3700
100R
3701
SEC_V
1N4148
6703
3702
47K
6704
1N4148
LPC
6706
1N4148
3703
1K5
1N4148
6705
7700
BC337-25
3704
4K7
GND_D
T200mA
# 1909
9902
5929
1m
2902
22n
5900
AMC-86 UCD
1710
PFC5000
1711
PFC5000
1712
PFC5000
1713
PFC5000
1704
T10A
1705
T10A
1707
T2A
1708
T2A
2705
100n
2707
100n
GBJ10D
6712
100n
2704
2706
6m8
2708
6m8
GND_AMP
2709
100n
6722
1N5392
6719
1N5392
6718
1N5392
6723
1N5392
6720
1N5392
6721
1N5392
GBU4K
#6713
2710
100n
2711
6m8
SEC_2V
GND_M
2712
10m
SEC_V
NTC
6917
1N4004
47R
3707
2715
100u
F1
F2
GND_AMP
6714
1N4148
3708
4K7
7701
BC327-40
7702
BC327-40
-VKK
3K3
3709
3K3
3710
220R
3711
PW_DN
2713
22u
6715
BZX79-C33
47n
2714
BZX79-C8V2
6716
GND_AMP
DIPMATE
# 0706
EH-B
1706
+VH
-VH
FAN_NTC
9903
GND_AMP
GND_M
GND_D
4K7
# 3712
1N4148
# 6717
LPS
1N4003
6900
1N4003
6901
47n
2900
6902
1N4148
3901
10K
6905
1N4003
3904
100K
2905
10n
BC557B
7900
2906
10n
7902
BC337-40
BZX79-C39
6912
3906
470R
2907
100u
3909
330K
6906
1N4003
3915
1M
5930
100u
3916
2K2
3902
4M7
3903
330R
2913
47n
5904
STBY
7901
BC547B
2916
100n
6916
1N4148
2917
4n7
BC557B
7903
3917
100K
2700
100n
1N4148
6707
2701
100n
3705
33K
1N4148
6708
GND_D
+5V6_ECO
3706
330R
1N4148
6709
1N4148
6710
2702
100u
BZX79-C5V6
6711
2703
100u
2918
2n2
GND_D
3912
10M
220n
2908
470n
2909
5931
1m
6913
1N4003
1700
EH-B
SEC_2V
GND_M
SEC_V
SEC_V
GND_D
GND_D
FAN_NTC
NTC
1701
FE-BT-VK-N
NTC
LPC
PW_DN
+5V6_ECO
GND_D
F1
F2
-VKK

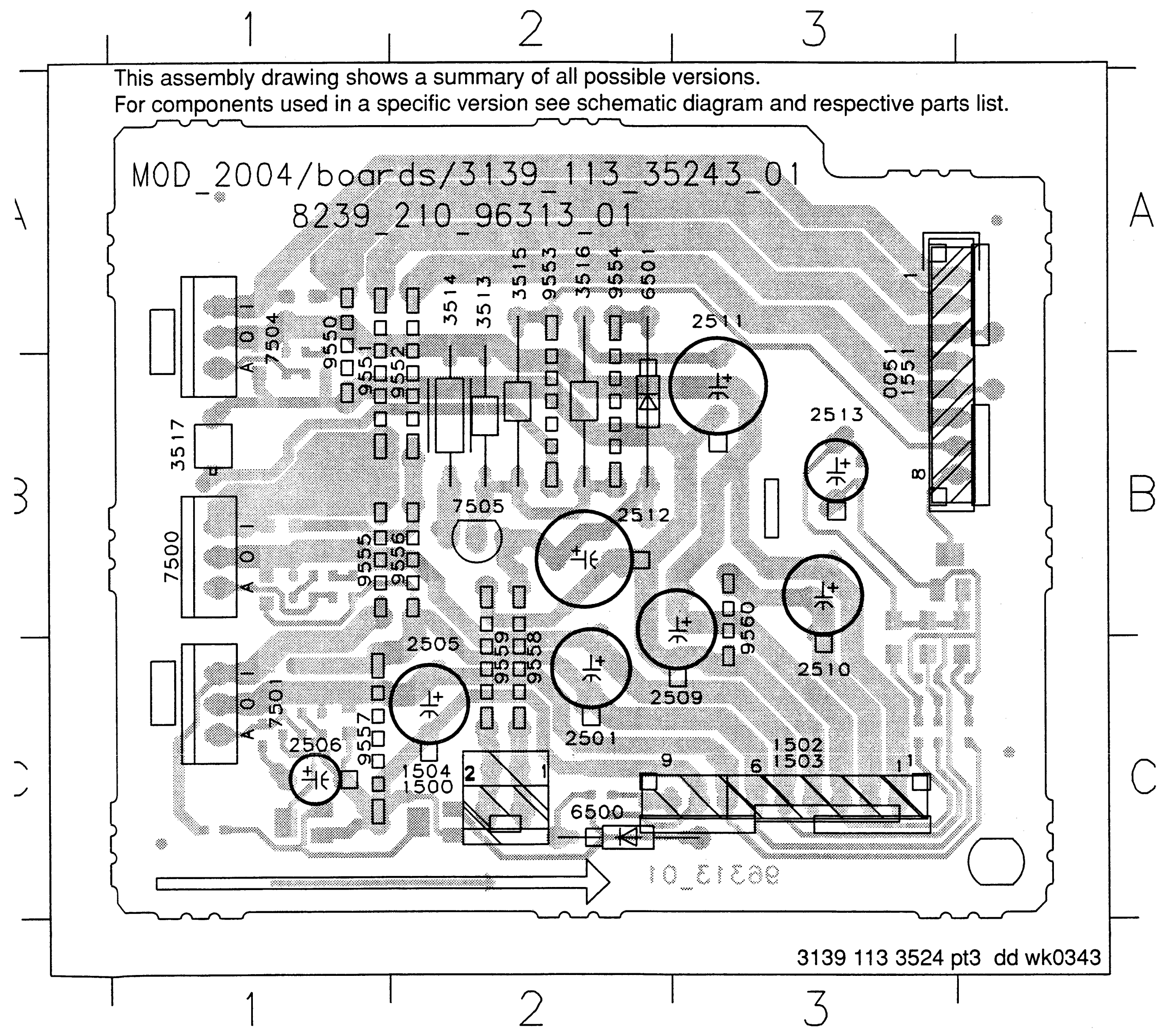
: Provision

Note : Some values may varies, see respective parts list for correct value.

8239_210_96175_01 for...3525 pt5 dd wk0343

EGULATOR UCD BOARD - COMPONENT LAYOUT

0051	B3	2501	C2	2512	B2	3517	B1	7505	B2	9555	B1
1500	C2	2505	C2	2513	B3	6500	C2	9550	A1	9556	B2
1502	C3	2506	C1	3513	A2	6501	A2	9551	B1	9557	C1
1503	C3	2509	C3	3514	A2	7500	B1	9552	B2	9558	C2
1504	C2	2510	C3	3515	A2	7501	C1	9553	A2	9559	C2
1551	B3	2511	A3	3516	A2	7504	A1	9554	A2	9560	B3

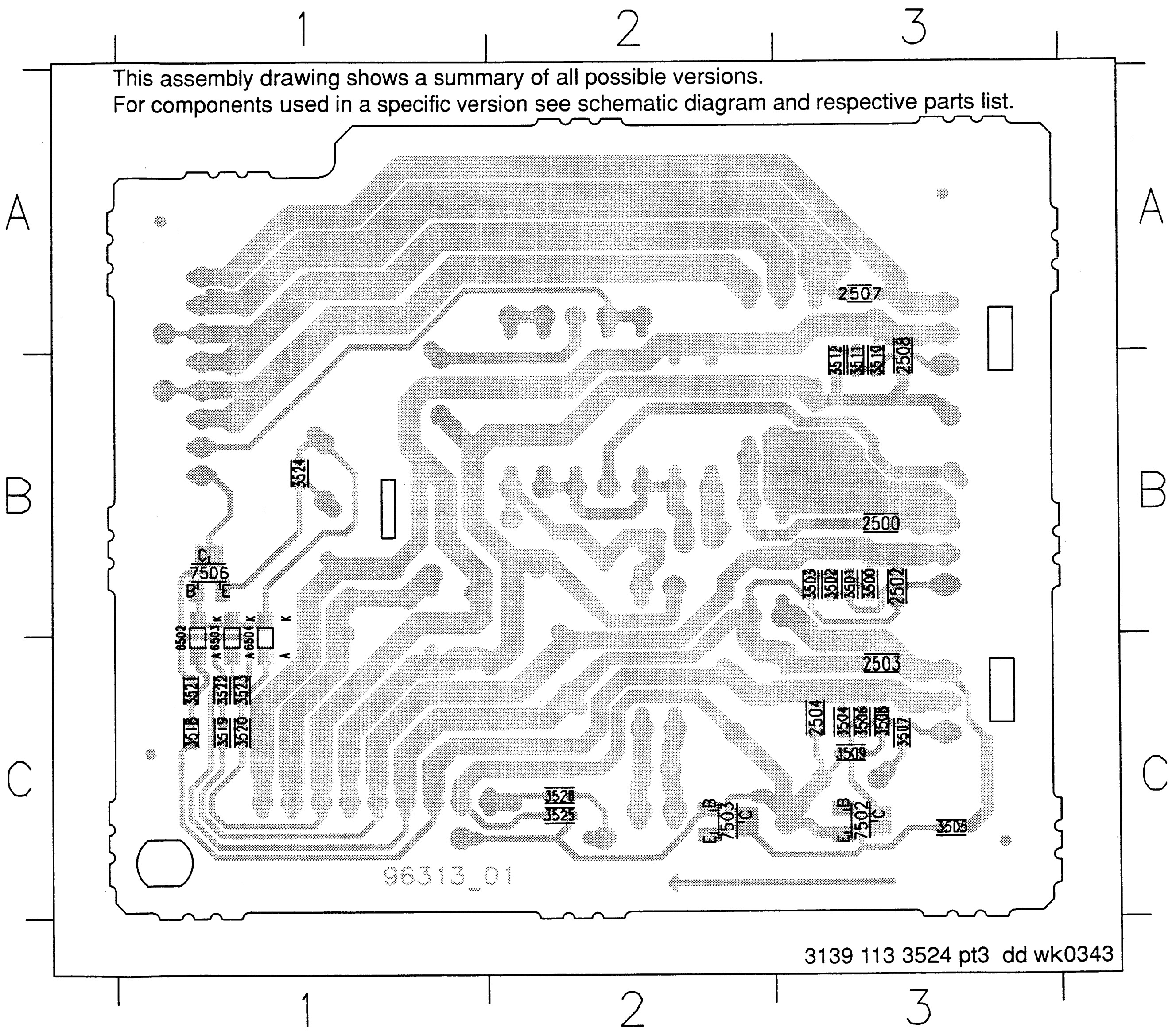

1
2
3
A
B
C
MOD_2004/boards/3139_113_35243_01
8239_210_96313_01
7504
9550
9551
9552
3514
3513
3515
9553
3516
9554
6501
2511
0051
1551
2513
3517
7505
2512
7500
9555
9556
9560
2510
2509
2505
9559
9558
7501
2506
9557
1504
1500
2501
6500
1502
1503
96313_01

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3524 pt3 dd wk0343

REGULATOR UCD BOARD - CHIP LAYOUT

2500	B3	2508	B3	3504	C3	3509	C3	3519	C1	3524	B1	6504	C1
2502	B3	3500	B3	3505	C3	3510	B3	3520	C1	3525	C2	7502	C3
2503	C3	3501	B3	3506	C3	3511	B3	3521	C1	3526	C2	7503	C2
2504	C3	3502	B3	3507	C3	3512	B3	3522	C1	6502	C1	7506	B1
2507	A3	3503	B3	3508	C3	3518	C1	3523	C1	6503	C1		

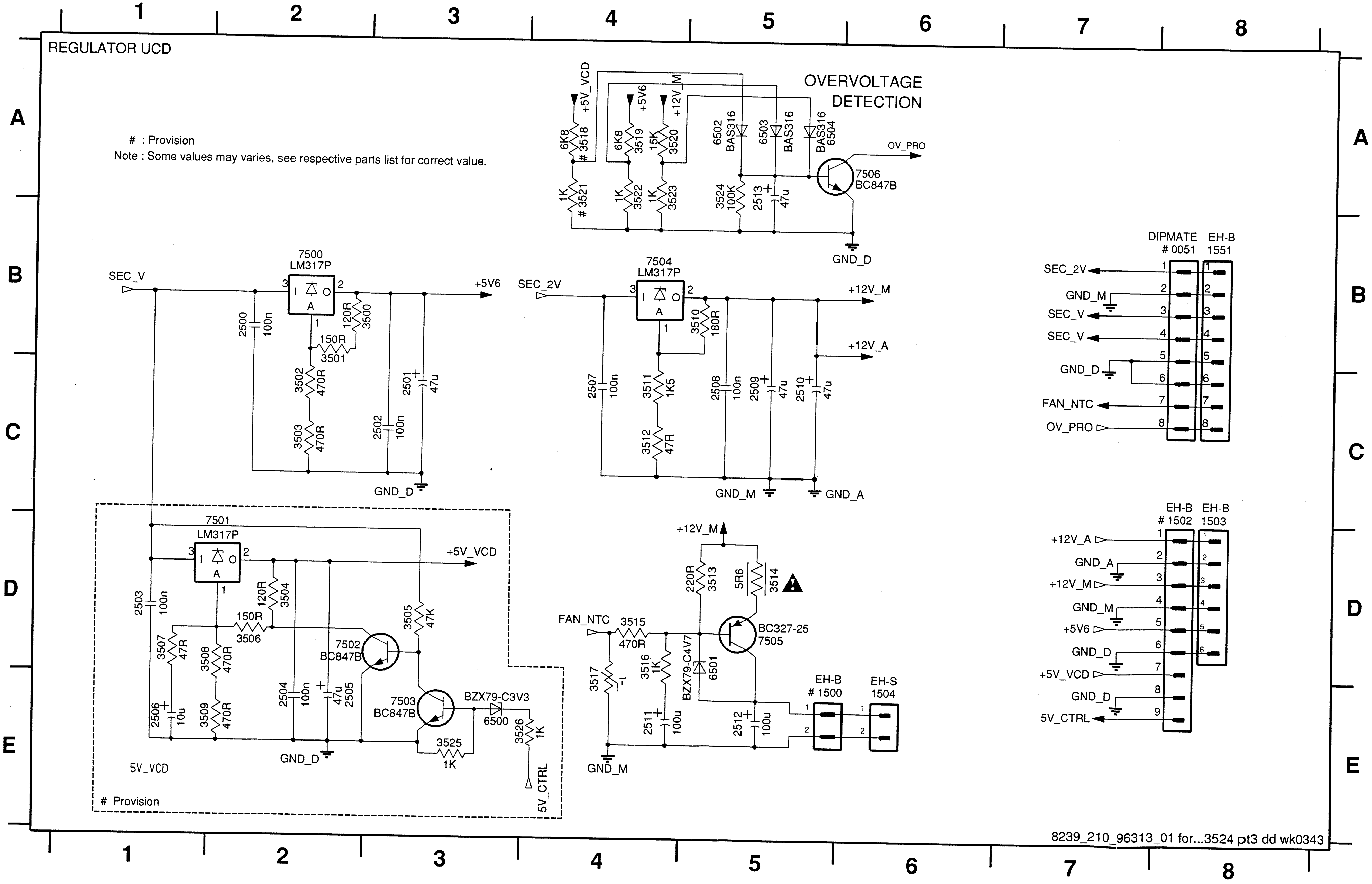

1
2
3
A
B
C
2507
3512
3511
3510
2508
3524
2500
7506
3503
3502
3501
3500
2502
2503
3523
3522
3521
3518
3519
3520
2504
3504
3506
3505
3507
3509
3526
3525
7503
7502
3508
96313_01

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram and respective parts list.

3139 113 3524 pt3 dd wk0343

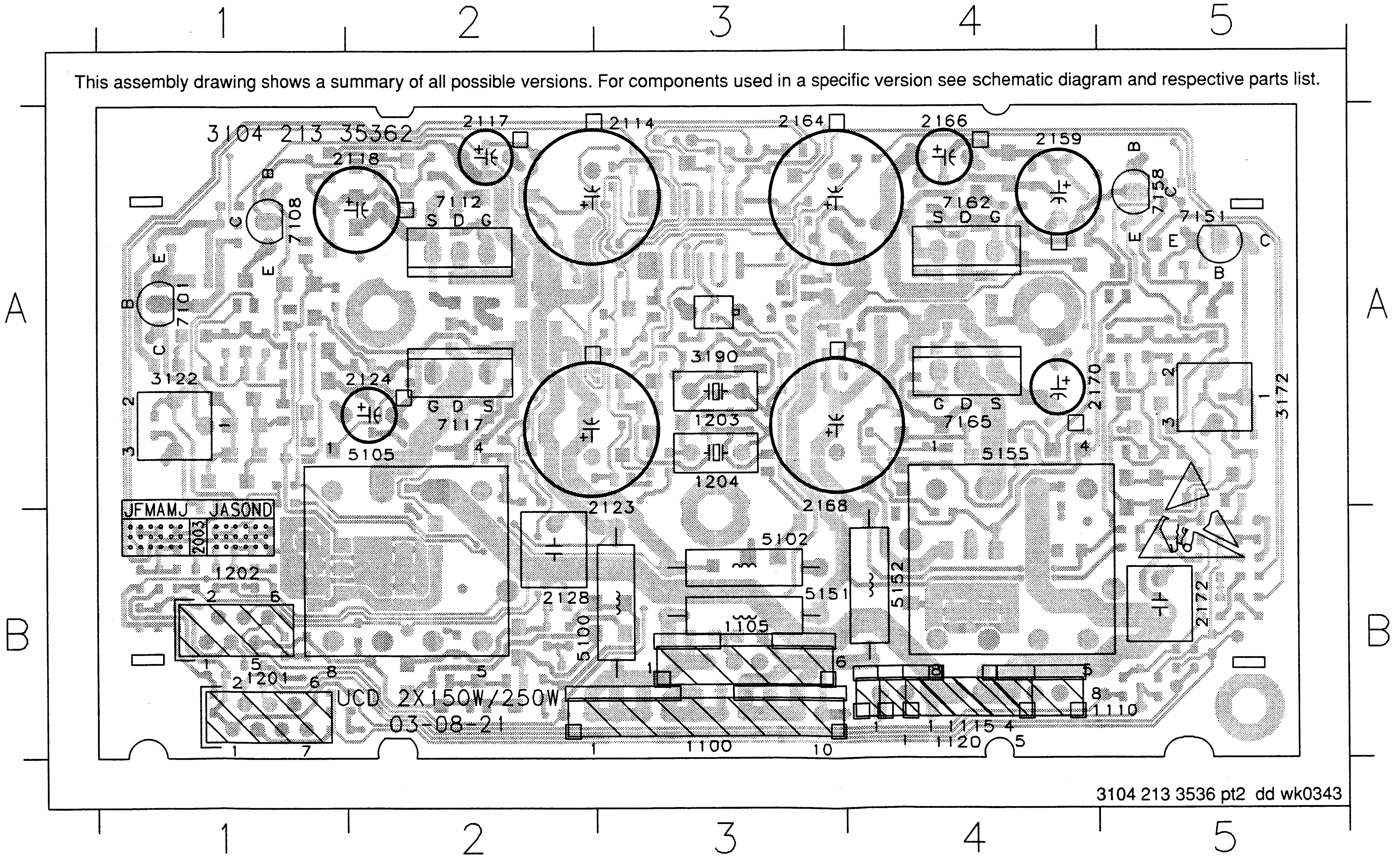
REGULATOR UCD BOARD - CIRCUIT DIAGRAM

0051 B8	1503 C8	2500 B2	2503 D1	2506 E1	2509 C5	2512 E5	3501 B2	3504 D2	3507 D1	3510 B5	3513 D5	3516 D4	3519 A4	3522 A4	3525 E3	6501 D5	6504 A5	7502 D2	7505 D5
1500 E5	1504 E6	2501 C3	2504 E2	2507 C4	2510 C5	2513 A5	3502 C2	3505 D3	3508 D2	3511 C4	3514 D5	3517 E4	3520 A4	3523 A4	3526 E4	6502 A5	7500 B2	7503 E3	7506 A6
1502 C8	1551 B8	2502 C3	2505 E2	2508 C5	2511 E4	3500 B2	3503 C2	3506 D2	3509 E2	3512 C4	3515 D4	3518 A4	3521 A4	3524 A5	6500 E3	6503 A5	7501 D1	7504 B4	


1
2
3
4
5
6
7
8
A
B
C
D
E
REGULATOR UCD
# : Provision
Note : Some values may varies, see respective parts list for correct value.
OVERVOLTAGE DETECTION
+5V_VCD
+5V6
+12V_M
6K8
# 3518
3519
15K
3520
1K
# 3521
3522
3523
6502
BAS316
6503
6504
3524
100K
2513
47u
OV_PRO
7506
BC847B
GND_D
SEC_V
7500
LM317P
I
O
A
+5V6
2500
100n
120R
3500
150R
3501
3502
470R
3503
2501
47u
2502
SEC_2V
7504
LM317P
+12V_M
+12V_A
3510
180R
2507
3511
1K5
3512
47R
2508
2509
2510
GND_M
GND_A
DIPMATE
# 0051
EH-B
1551
SEC_2V
GND_M
SEC_V
GND_D
FAN_NTC
OV_PRO
7501
LM317P
+5V_VCD
2503
100n
3504
150R
3506
3505
47K
7502
BC847B
3507
47R
3508
470R
3509
2504
2505
2506
10u
7503
BC847B
BZX79-C3V3
6500
3525
1K
3526
5V_CTRL
5V_VCD
# Provision
+12V_M
220R
3513
5R6
3514
FAN_NTC
3515
470R
3516
1K
BZX79-C4V7
6501
BC327-25
7505
3517
2511
100u
2512
EH-B
# 1500
EH-S
1504
EH-B
# 1502
1503
+12V_A
GND_A
+12V_M
GND_M
+5V6
GND_D
+5V_VCD
5V_CTRL
8239_210_96313_01 for...3524 pt3 dd wk0343

MPLIFIER UCD BOARD (BTL MASTER/SLAVE) - COMPONENT LAYOUT

1100	B3	1201	B1	2117	A2	2159	A4	2172	B5	5102	B3	7101	A1	7158	A5
1105	B3	1202	B1	2118	A2	2164	A3	3122	A1	5105	B2	7108	A1	7162	A4
1110	B4	1203	A3	2123	A2	2166	A4	3172	A5	5151	B3	7112	A2	7165	A4
1115	B4	1204	A3	2124	A2	2168	A3	3190	A3	5152	B4	7117	A2		
1120	B4	2114	A2	2128	B2	2170	A4	5100	B3	5155	B4	7151	A5		



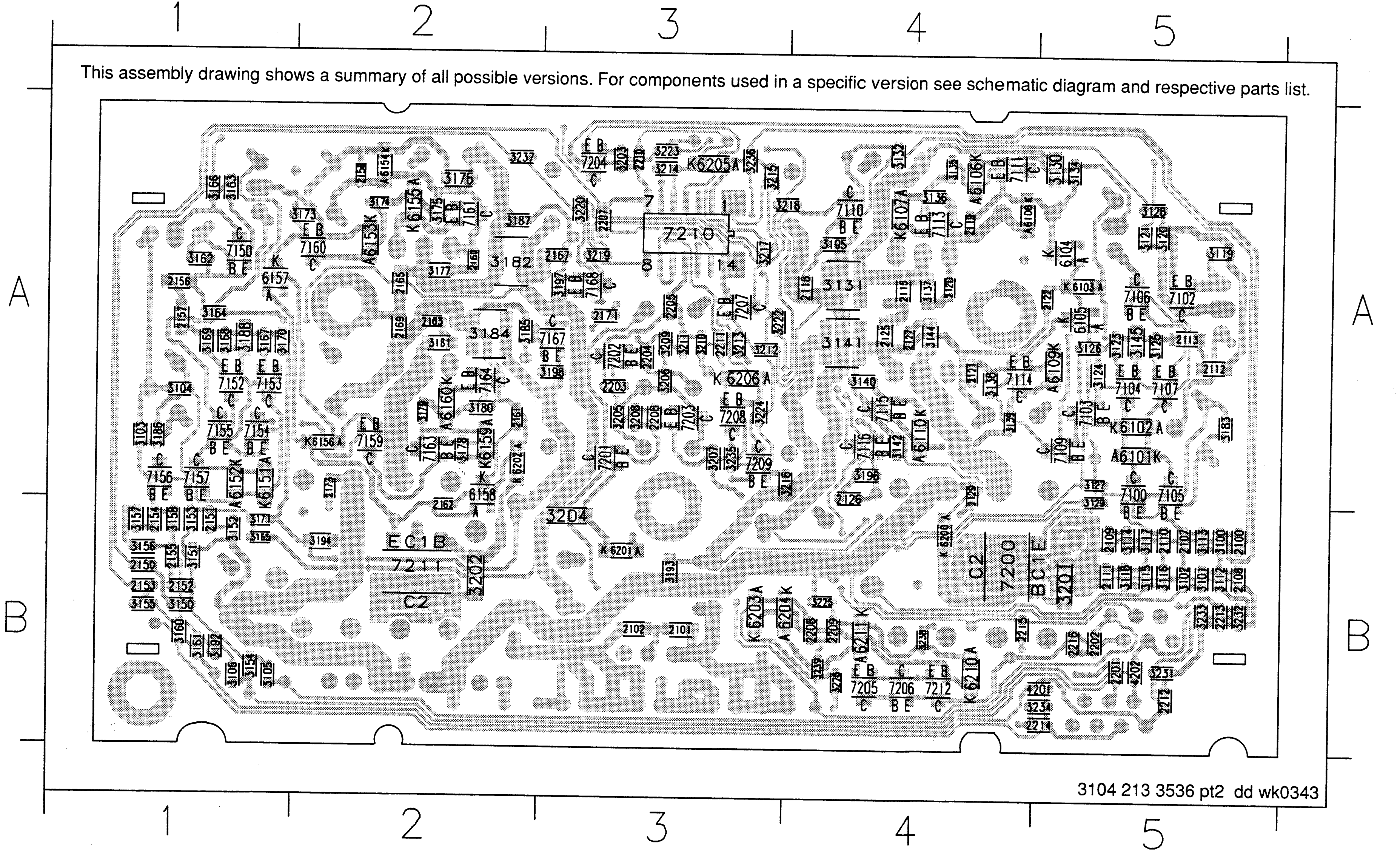
This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3104 213 3536 pt2 dd wk0343

1
2
3
4
5
A
B
3104 213 35362
2117
2114
2164
2166
2159
2118
7112
S D G
7108
7162
7158
7151
7101
3122
2124
G D S
7117
5105
3190
1203
1204
7165
5155
2170
3172
JFMAMJ
JASOND
2003
2123
2168
5102
1202
2128
5151
5152
2172
5100
1105
1201
UCD 2X150W/250W
03-08-21
1100
1115
1120
1110

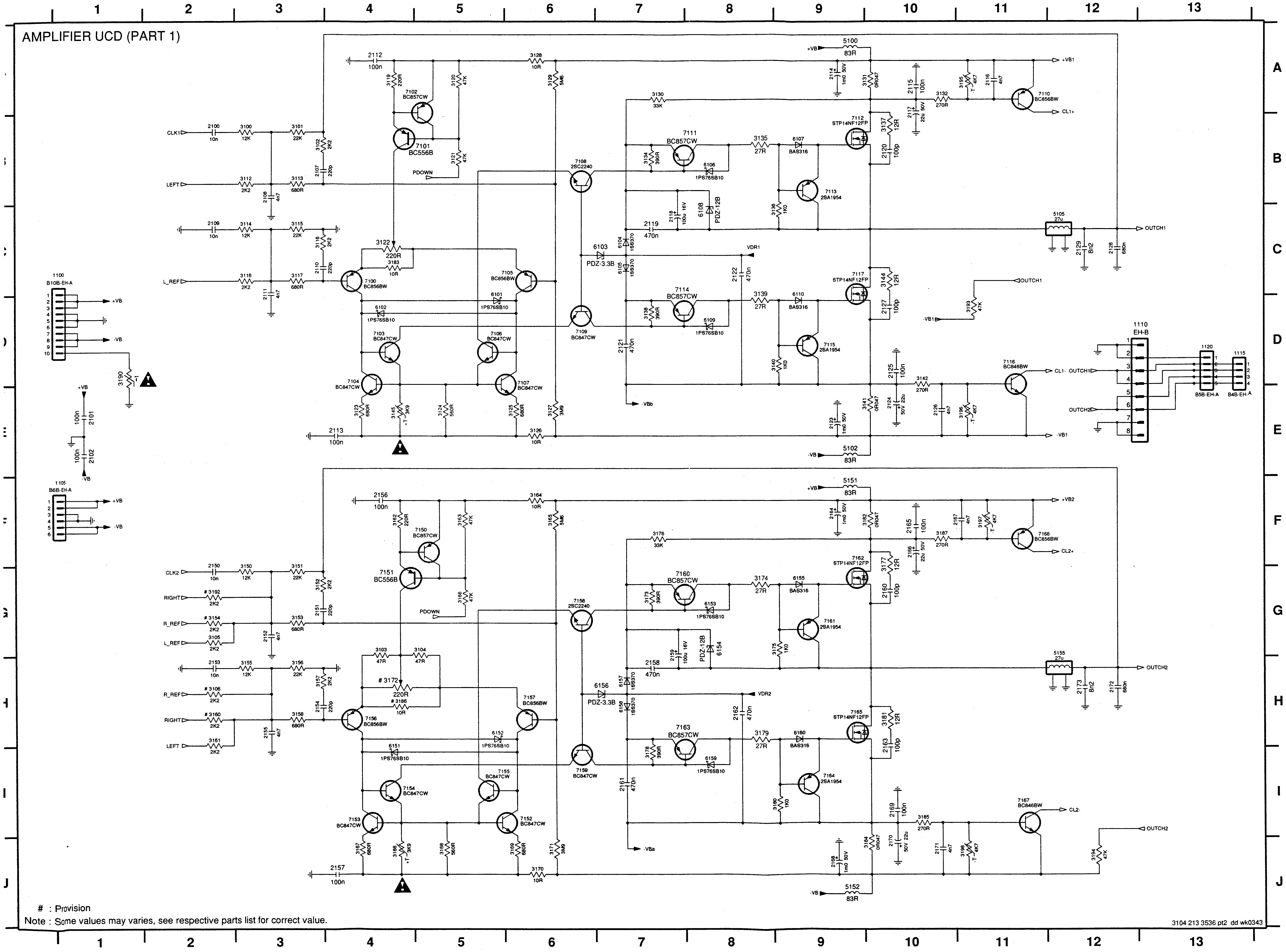
AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CHIP LAYOUT

2100	B5
2101	B3
2102	B3
2107	B5
2108	B5
2109	B5
2110	B5
2111	B5
2112	A5
2113	A5
2115	A4
2116	A4
2119	A4
2120	A4
2121	A4
2122	A5
2125	A4
2126	A4
2127	A4
2129	A4
2150	B1
2151	B1
2152	B1
2153	B1
2154	B1
2155	B1
2156	A1
2157	A1
2158	A2
2160	A2
2161	A2
2162	B2
2163	A2
2165	A2
2167	A3
2169	A2
2171	A3
2173	A2
2201	B5
2202	B5
2203	A3
2204	A3
2205	A3
2206	A3
2207	A3
2208	B4
2209	B4
2210	A3
2211	A3
2212	B5
2213	B5
2214	B5
2215	B4
2216	B5
3100	B5
3101	B5
3102	B5
3103	A1
3104	A1
3105	B1
3106	B1
3112	B5
3113	B5
3114	B5
3115	B5
3116	B5
3117	B5
3118	B5
3119	A5
3120	A5
3121	A5
3123	A5
3124	A5
3125	A5
3126	A5
3127	A5
3128	A5
3129	A5
3130	A5
3131	A4
3132	A4
3134	A5
3135	A4
3136	A4
3137	A4
3138	A4
3139	A4
3140	A4
3141	A4
3142	A4
3144	A4
3145	A5
3150	B1
3151	B1
3152	B1
3153	B1
3154	B1
3155	B1
3156	B1
3157	B1
3158	B1
3160	B1
3161	B1
3162	A1
3163	A1
3164	A1
3165	B1
3166	A1
3167	A1
3168	A1
3169	A1
3170	A1
3171	B1
3173	A2
3174	A2
3175	A2
3176	A2
3177	A2
3178	A2
3179	A2
3180	A2
3181	A2
3182	A2
3183	A5
3184	A2
3185	A2
3186	A1
3187	A2
3188	A1
3192	B1
3193	B3
3194	B2
3195	A4
3196	A4
3197	A3
3198	A3
3201	B5
3202	B2
3203	A3
3204	B3
3205	A3
3206	A3
3207	A3
3208	A3
3209	A3
3210	A3
3211	A3
3212	A3
3213	A3
3214	A3
3215	A3
3216	A4
3217	A3
3218	A3
3219	A3
3220	A3
3222	A3
3223	A3
3224	A3
3225	B4
3226	B4
3231	B5
3232	B5
3233	B5
3234	B5
3235	A3
3236	A3
3237	A2
3238	B4
3239	B4
4201	B5
4202	B5
6101	A5
6102	A5
6103	A5
6104	A5
6105	A5
6106	A4
6107	A4
6108	A4
6109	A5
6110	A4
6151	A1
6152	A1
6153	A2
6154	A2
6155	A2
6156	A2
6157	A1
6158	A2
6159	A2
6160	A2
6200	B4
6201	B3
6202	A2
6203	B3
6204	B4
6205	A3
6206	A3
6210	B4
6211	B4
7100	A5
7102	A5
7103	A5
7104	A5
7105	A5
7106	A5
7107	A5
7109	A5
7110	A4
7111	A4
7113	A4
7114	A4
7115	A4
7116	A4
7150	A1
7152	A1
7153	A1
7154	A1
7155	A1
7156	A1
7157	A1
7159	A2
7160	A2
7161	A2
7163	A2
7164	A2
7167	A3
7168	A3
7200	B4
7201	A3
7202	A3
7203	A3
7204	A3
7205	B4
7206	B4
7207	A3
7208	A3
7209	A3
7210	A3
7211	B2
7212	B4
F100	B3
F101	B3
F102	B3
F103	B2
F104	B2
F105	B2
F106	B3
F107	A4
F108	A4
F109	A2
F110	A3
F111	A5
F112	B2
F113	A3
F114	B1
F115	B1
F116	B1
F117	B1
F118	B4
F119	B4
F120	B4
F121	A3
F122	A3


This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3104 213 3536 pt2 dd wk0343

MPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CIRCUIT DIAGRAM PART 1


AMPLIFIER UCD (PART 1)
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I J
CLK1
LEFT
L_REF
CLK2
RIGHT
R_REF
L_REF
PDOWN
+VB
-VB
+VB1
-VB1
+VB2
CL1+
CL1-
CL2+
CL2-
OUTCH1
OUTCH2
VDR1
VDR2
-VBb
-VBa
1100 B10B-EH-A
1105 B6B-EH-B
1110 EH-B
1120 B5B-EH-A
1115 B4B-EH-A
3190
7101 BC556B
7102 BC857CW
7100 BC856BW
7105 BC856BW
7103 BC847CW
7104 BC847CW
7106 BC847CW
7107 BC847CW
7108 2SC2240
7109 BC847CW
7110 BC856BW
7111 BC857CW
7112 STP14NF12FP
7113 2SA1954
7114 BC857CW
7115 2SA1954
7116 BC846BW
7117 STP14NF12FP
6103 PDZ-3.3B
6108 PDZ-12B
7150 BC857CW
7151 BC556B
7156 BC856BW
7157 BC856BW
7154 BC847CW
7153 BC847CW
7155 BC847CW
7152 BC847CW
7158 2SC2240
7159 BC847CW
7160 BC857CW
7161 2SA1954
7162 STP14NF12FP
7163 BC857CW
7164 2SA1954
7165 STP14NF12FP
7167 BC846BW
7168 BC856BW
6156 PDZ-3.3B
6154 PDZ-12B
5100 83R
5102 83R
5151 83R
5152 83R
5105 27u
5155 27u
3122 220R
3172 220R

: Provision

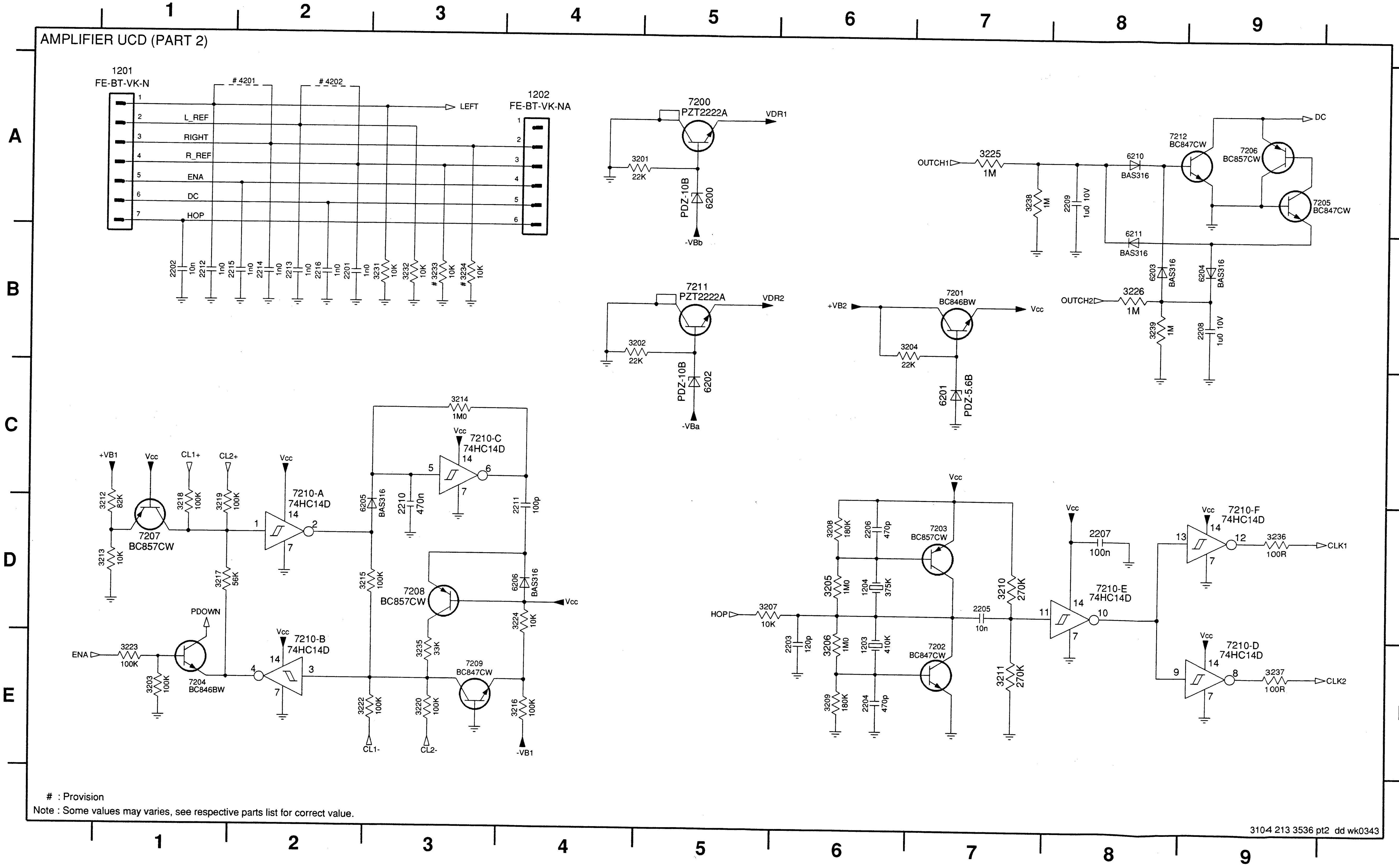
Note : Some values may varies, see respective parts list for correct value.

3104 213 3536 pt2 dd wk0343

1100	C1
1105	F1
1110	D12
1115	D13
1120	D13
2100	B2
2101	E1
2102	E1
2107	B3
2108	B3
2109	C2
2110	C3
2111	C3
2112	A4
2113	E4
2114	A9
2115	A10
2116	A11
2117	A10
2118	C7
2119	C7
2120	B10
2121	D7
2122	C8
2123	E9
2124	E10
2125	D10
2126	E10
2127	D10
2128	C12
2129	C12
2150	G2
2151	G3
2152	G3
2153	H2
2154	H3
2155	H3
2156	F4
2157	J4
2158	H7
2159	G7
2160	G10
2161	I7
2162	H8
2163	H10
2164	F9
2165	F10
2166	F10
2167	F11
2168	J9
2169	I10
2170	J10
2171	J10
2172	H12
2173	H12
3100	B3
3101	B3
3102	B3
3103	G4
3104	G5
3105	G2
3106	H2
3112	B3
3113	B3
3114	C3
3115	C3
3116	C3
3117	C3
3118	C3
3119	A4
3120	A5
3121	B5
3122	C4
3123	E4
3124	E5
3125	E6
3126	E6
3127	E6
3128	A6
3129	A6
3130	A7
3131	A10
3132	A10
3134	B7
3135	B8
3136	C9
3137	B10
3138	D7
3139	D8
3140	D9
3141	E10
3142	D10
3144	C10
3145	E4
3150	G3
3151	G3
3152	G3
3153	G3
3154	G2
3155	H3
3156	H3
3157	H3
3158	H3
3160	H2
3161	H2
3162	F4
3163	F5
3164	F6
3165	F6
3166	G5
3167	J4
3168	J5
3169	J6
3170	J6
3171	J6
3172	H4
3173	G7
3174	G8
3175	G9
3176	F7
3177	F10
3178	I7
3179	H8
3180	I9
3181	H10
3182	F10
3183	C4
3184	J10
3185	I10
3186	H4
3187	F10
3188	J4
3190	D1
3192	G2
3193	D11
3194	J12
3195	A11
3196	E11
3197	F11
3198	J11
5100	A9
5102	E9
5105	C12
5151	F9
5152	J9
5155	G12
6101	D5
6102	D4
6103	C7
6104	C7
6105	C7
6106	B8
6107	B9
6108	C8
6109	D8
6110	D9
6151	I4
6152	H5
6153	G8
6154	G8
6155	G9
6156	H7
6157	H7
6158	H7
6159	I8
6160	H9
7100	C4
7101	B5
7102	A4
7103	D4
7104	D4
7105	C6
7106	D5
7107	D6
7108	B6
7109	D6
7110	A11
7111	B8
7112	B9
7113	B9
7114	C8
7115	D9
7116	D11
7117	C9
7150	F5
7151	F4
7152	I6
7153	I4
7154	I4
7155	I6
7156	H4
7157	H6
7158	G6
7159	I6
7160	G8
7161	G9
7162	F9
7163	H8
7164	I9
7165	H9
7167	I11
7168	F11

AMPLIFIER UCD BOARD (BTL MASTER/SLAVE) - CIRCUIT DIAGRAM PART 2

1201	A1
1202	A4
1203	E6
1204	D6
2201	B2
2202	B1
2203	E6
2204	E6
2205	D7
2206	D6
2207	D8
2208	B9
2209	A8
2210	D3
2211	D4
2212	B1
2213	B2
2214	B2
2215	B1
2216	B2
3201	A4
3202	B4
3203	E1
3204	B6
3205	D6
3206	E6
3207	D5
3208	D6
3209	E6
3210	D7
3211	E7
3212	D1
3213	D1
3214	C3
3215	D3
3216	E4
3217	D1
3218	D1
3219	D1
3220	E3
3222	E3
3223	E1
3224	D4
3225	A7
3226	B8
3231	B3
3232	B3
3233	B3
3234	B3
3235	E3
3236	D9
3237	E9
3238	A7
3239	B8
4201	A2
4202	A2
6200	A5
6201	C7
6202	C5
6203	B8
6204	B9
6205	D2
6206	D4
6210	A8
6211	B8
7200	A5
7201	B7
7202	E7
7203	D7
7204	E1
7205	A9
7206	A9
7207	D1
7208	D3
7209	E3
7210-A	D2
7210-B	E2
7210-C	C3
7210-D	E9
7210-E	D8
7210-F	D9
7211	B5
7212	A8

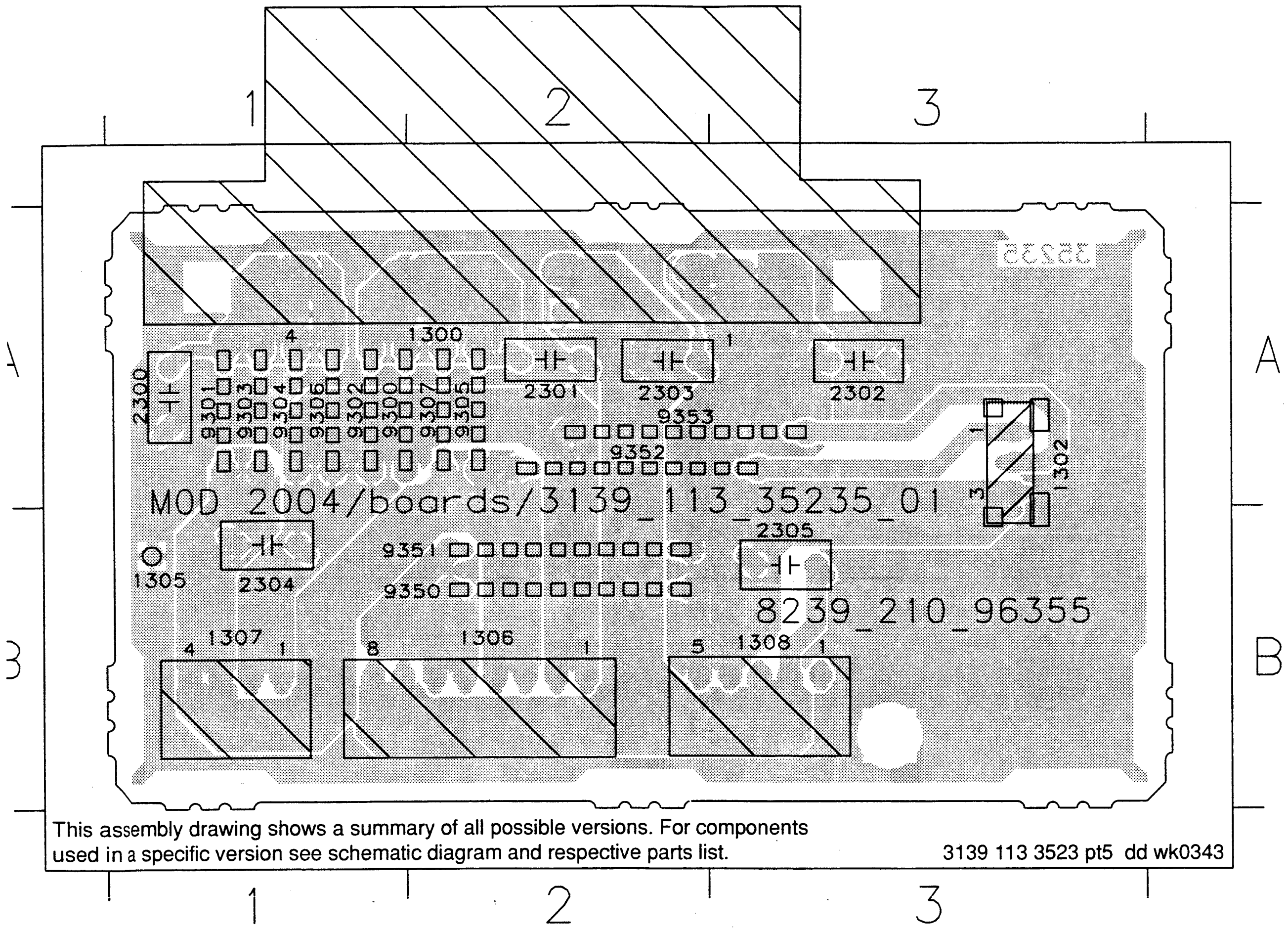

AMPLIFIER UCD (PART 2)
1
2
3
4
5
6
7
8
9
A
B
C
D
E
1201
FE-BT-VK-N
1202
FE-BT-VK-NA
# 4201
# 4202
LEFT
L_REF
RIGHT
R_REF
ENA
DC
HOP
2202 10n
2212 1n0
2215 1n0
2214 1n0
2213 1n0
2216 1n0
2201 1n0
3231 10K
3232 10K
# 3233 10K
# 3234 10K
7200
PZT2222A
VDR1
3201 22K
PDZ-10B
6200
-VBb
7211
PZT2222A
VDR2
3202 22K
6202
-VBa
+VB2
7201
BC846BW
Vcc
3204 22K
6201
PDZ-5.6B
OUTCH1
3225 1M
3238 1M
2209 1u0 10V
6210 BAS316
6211 BAS316
7212 BC847CW
7206 BC857CW
7205 BC847CW
OUTCH2
3226 1M
3239 1M
2208 1u0 10V
6203 BAS316
6204 BAS316
3214 1M0
7210-C 74HC14D
+VB1
CL1+
CL2+
3212 82K
7207 BC857CW
3213 10K
3218 100K
3219 100K
3217 56K
7210-A 74HC14D
6205 BAS316
2210 470n
2211 100p
3215 100K
7208 BC857CW
6206 BAS316
3224 10K
PDOWN
ENA
3223 100K
3203 100K
7204 BC846BW
7210-B 74HC14D
3235 33K
7209 BC847CW
3222 100K
3220 100K
3216 100K
CL1-
CL2-
-VB1
HOP
3207 10K
2203 120p
3208 180K
2206 470p
7203 BC857CW
3205 1M0
1204 375K
3206 1M0
1203 410K
7202 BC847CW
3209 180K
2204 470p
3210 270K
3211 270K
2205 10n
2207 100n
7210-E 74HC14D
7210-F 74HC14D
3236 100R
CLK1
7210-D 74HC14D
3237 100R
CLK2
3104 213 3536 pt2 dd wk0343

: Provision

Note : Some values may varies, see respective parts list for correct value.

PEAKER UCD BOARD - COMPONENT LAYOUT

1300 A2	1307 B1	2302 A3	9300 A1	9304 A1	9350 B2
1302 A3	1308 B3	2303 A2	9301 A1	9305 A2	9351 B2
1305 B1	2300 A1	2304 B1	9302 A1	9306 A1	9352 A2
1306 B2	2301 A2	2305 B3	9303 A1	9307 A2	9353 A2

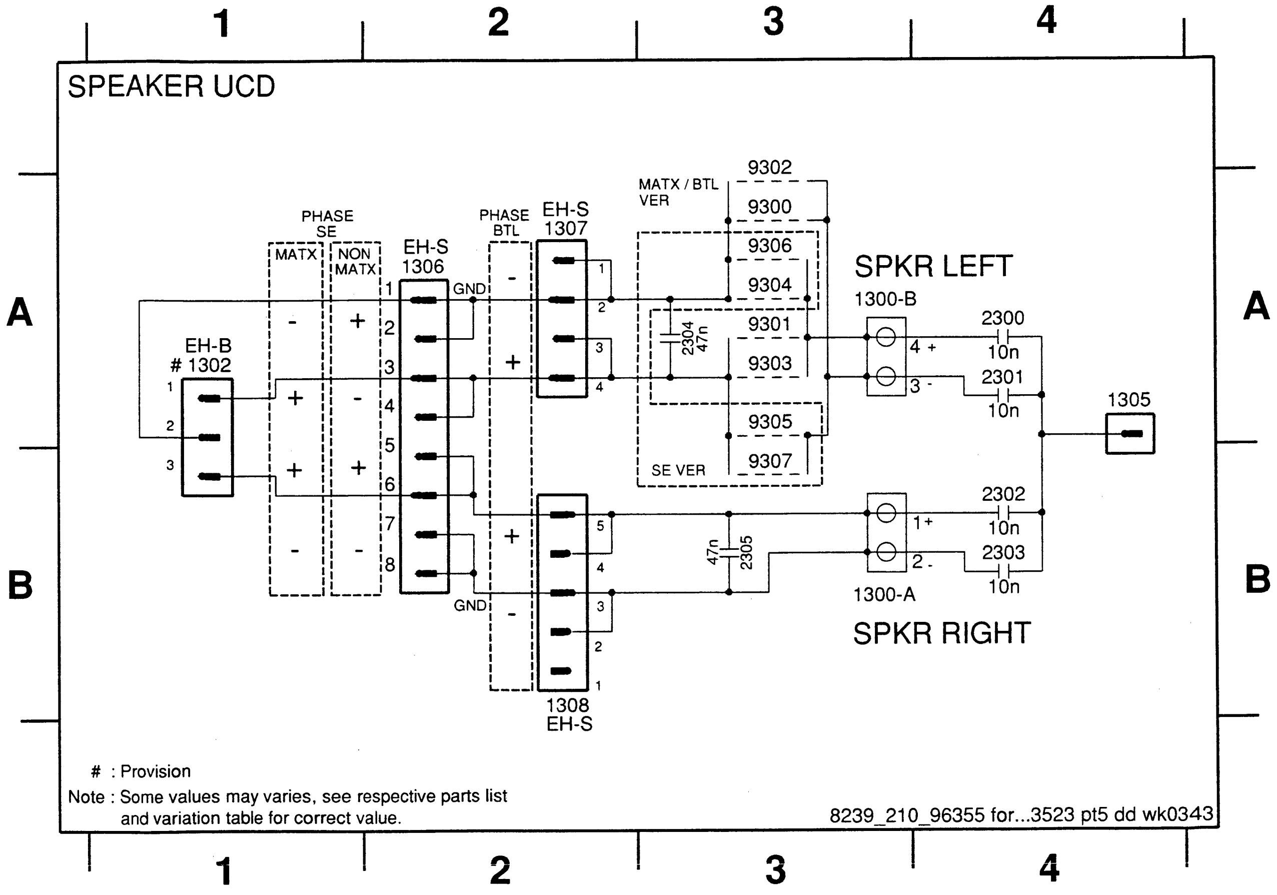

1
2
3
A
B
1300
2300
2301
2303
2302
9353
9352
1302
MOD 2004/boards/3139_113_35235_01
2305
1305
2304
9351
9350
8239_210_96355
1307
1306
1308

This assembly drawing shows a summary of all possible versions. For components used in a specific version see schematic diagram and respective parts list.

3139 113 3523 pt5 dd wk0343

SPEAKER UCD BOARD - CIRCUIT DIAGRAM

1300-A B3	1302 A1	1306 A2	1308 B2	2301 A4	2303 B4	2305 B3	9301 A3	9303 A3	9305 A3	9307 B3
1300-B A3	1305 A4	1307 A2	2300 A4	2302 B4	2304 A3	9300 A3	9302 A3	9304 A3	9306 A3	


1
2
3
4
A
B
SPEAKER UCD
EH-B
# 1302
PHASE SE
MATX
NON MATX
EH-S 1306
GND
PHASE BTL
EH-S 1307
MATX / BTL VER
9302
9300
9306
9304
9301
9303
9305
9307
SE VER
2304 47n
SPKR LEFT
1300-B
2300 10n
2301 10n
1305
2302 10n
2303 10n
2305 47n
1300-A
SPKR RIGHT
1308 EH-S

: Provision

Note : Some values may varies, see respective parts list and variation table for correct value.

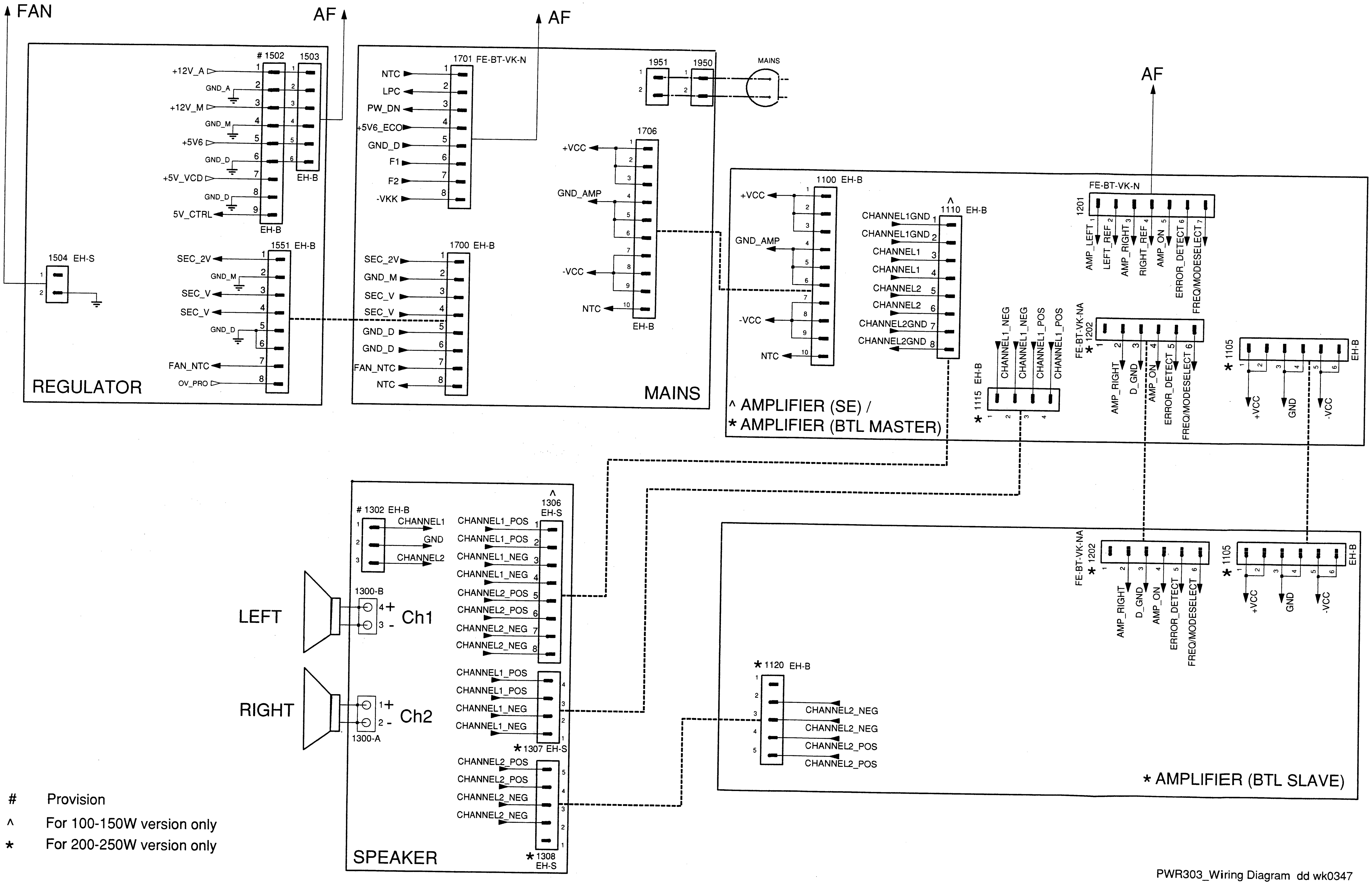
8239_210_96355 for...3523 pt5 dd wk0343

SPEAKER UCD BOARD - VARIATION TABLE

	SPEAKER UCD BOARD	
Item No.	100-150W (Non Matrix Version)	200-250W
1302	-	-
1306	X	-
1307 , 1308	-	X
2304 , 2305	-	X
9300 , 9301	-	X
9302 , 9303	-	X
9304 , 9305	X	-
9306 , 9307	X	-

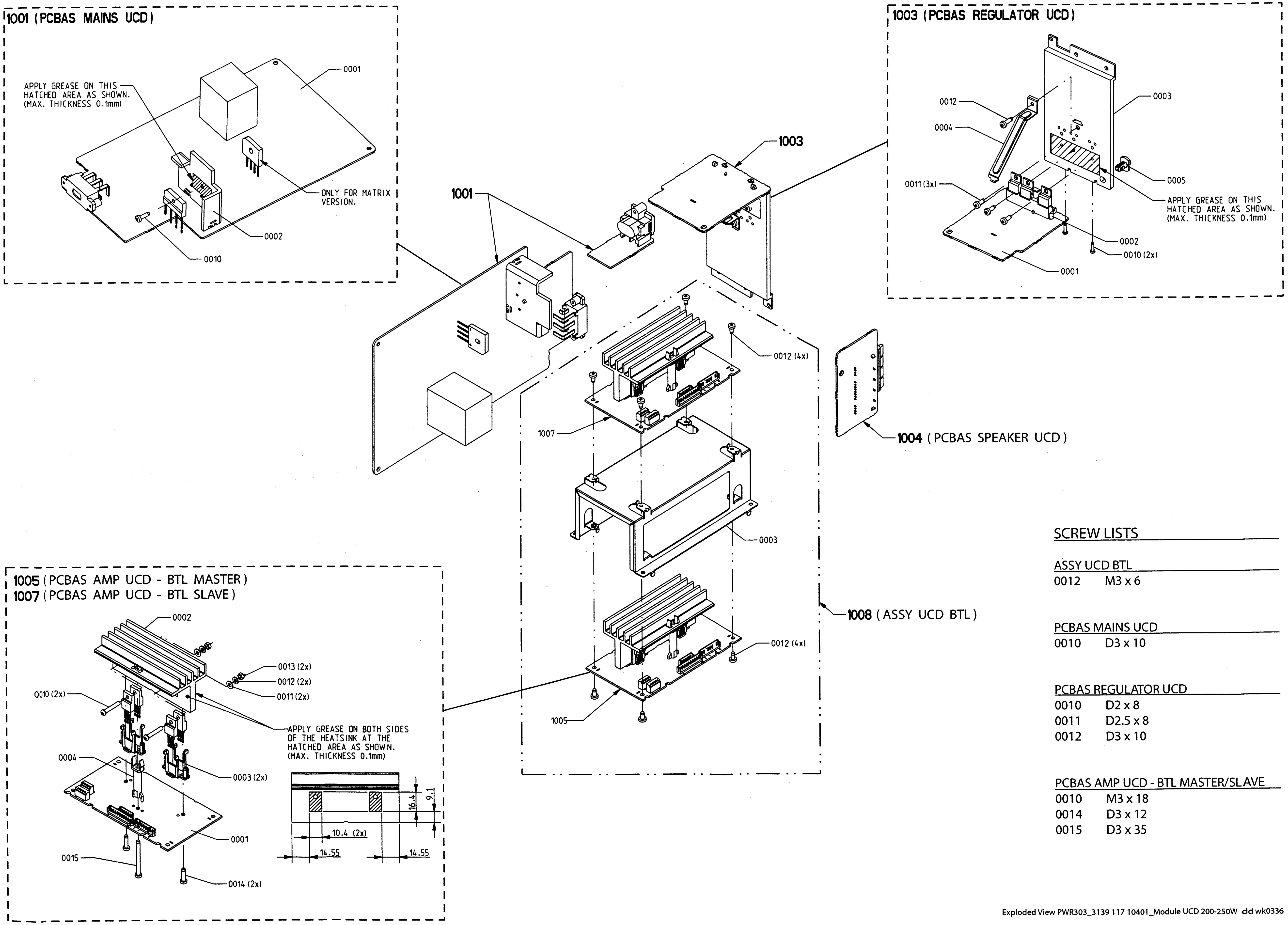
X - item in use.

WIRING DIAGRAM


FAN
AF
AF
AF
REGULATOR
# 1502
1503
EH-B
EH-B
+12V_A
GND_A
+12V_M
GND_M
+5V6
GND_D
+5V_VCD
GND_D
5V_CTRL
1504 EH-S
1551 EH-B
SEC_2V
GND_M
SEC_V
SEC_V
GND_D
FAN_NTC
OV_PRO
MAINS
1701 FE-BT-VK-N
NTC
LPC
PW_DN
+5V6_ECO
GND_D
F1
F2
-VKK
1700 EH-B
SEC_2V
GND_M
SEC_V
SEC_V
GND_D
GND_D
FAN_NTC
NTC
1951
1950
MAINS
1706
EH-B
+VCC
GND_AMP
-VCC
NTC
^ AMPLIFIER (SE) /
* AMPLIFIER (BTL MASTER)
1100 EH-B
+VCC
GND_AMP
-VCC
NTC
^ 1110 EH-B
CHANNEL1GND
CHANNEL1GND
CHANNEL1
CHANNEL1
CHANNEL2
CHANNEL2
CHANNEL2GND
CHANNEL2GND
* 1115 EH-B
CHANNEL1_NEG
CHANNEL1_NEG
CHANNEL1_POS
CHANNEL1_POS
FE-BT-VK-N
1201
AMP_LEFT
LEFT_REF
AMP_RIGHT
RIGHT_REF
AMP_ON
ERROR_DETECT
FREQ/MODESELECT
FE-BT-VK-NA
* 1202
AMP_RIGHT
D_GND
AMP_ON
ERROR_DETECT
FREQ/MODESELECT
* 1105
EH-B
+VCC
GND
-VCC
SPEAKER
# 1302 EH-B
CHANNEL1
GND
CHANNEL2
^ 1306 EH-S
CHANNEL1_POS
CHANNEL1_POS
CHANNEL1_NEG
CHANNEL1_NEG
CHANNEL2_POS
CHANNEL2_POS
CHANNEL2_NEG
CHANNEL2_NEG
1300-B
LEFT
Ch1
4+
3 -
RIGHT
Ch2
1+
2 -
1300-A
CHANNEL1_POS
CHANNEL1_POS
CHANNEL1_NEG
CHANNEL1_NEG
* 1307 EH-S
CHANNEL2_POS
CHANNEL2_POS
CHANNEL2_NEG
CHANNEL2_NEG
* 1308 EH-S
* AMPLIFIER (BTL SLAVE)
FE-BT-VK-NA
* 1202
AMP_RIGHT
D_GND
AMP_ON
ERROR_DETECT
FREQ/MODESELECT
* 1105
EH-B
+VCC
GND
-VCC
* 1120 EH-B
CHANNEL2_NEG
CHANNEL2_NEG
CHANNEL2_POS
CHANNEL2_POS

#	Provision
^	For 100-150W version only
*	For 200-250W version only

XPLODED VIEW


1001 (PCBAS MAINS UCD)
APPLY GREASE ON THIS HATCHED AREA AS SHOWN. (MAX. THICKNESS 0.1mm)
0001
ONLY FOR MATRIX VERSION.
0002
0010
1003 (PCBAS REGULATOR UCD)
0012
0004
0003
0011 (3x)
0005
APPLY GREASE ON THIS HATCHED AREA AS SHOWN. (MAX. THICKNESS 0.1mm)
0002
0010 (2x)
0001
1003
1001
0012 (4x)
1007
1004 (PCBAS SPEAKER UCD)
0003
1008 (ASSY UCD BTL)
0012 (4x)
1005
1005 (PCBAS AMP UCD - BTL MASTER)
1007 (PCBAS AMP UCD - BTL SLAVE)
0002
0013 (2x)
0012 (2x)
0011 (2x)
0010 (2x)
APPLY GREASE ON BOTH SIDES OF THE HEATSINK AT THE HATCHED AREA AS SHOWN. (MAX. THICKNESS 0.1mm)
0004
0003 (2x)
16.4
9.1
10.4 (2x)
0001
14.55
14.55
0015
0014 (2x)

SCREW LISTS

ASSY UCD BTL

0012	M3 x 6

PCBAS MAINS UCD

0010	D3 x 10

PCBAS REGULATOR UCD

0010	D2 x 8
0011	D2.5 x 8
0012	D3 x 10

PCBAS AMP UCD - BTL MASTER/SLAVE

0010	M3 x 18
0014	D3 x 12
0015	D3 x 35

Exploded View PWR303_3139 117 10401_Module UCD 200-250W dd wk0336

ELECTRICAL PARTS LIST - MAINS UCD BOARD

MISCELLANEOUS

1701	4822 265 11515	FLEX CONNECTOR 8P	
1704	2422 086 02152	⚠ FUSE 5X20 T 10A 250V	
1705	2422 086 02152	⚠ FUSE 5X20 T 10A 250V	
1707	9965 000 07788	⚠ FUSE RAD LT 2A 250V	
1708	9965 000 07788	⚠ FUSE RAD LT 2A 250V	
1710	2422 090 01101	SOC FUSE V 1P F	
1711	2422 090 01101	SOC FUSE V 1P F	
1712	2422 090 01101	SOC FUSE V 1P F	
1713	2422 090 01101	SOC FUSE V 1P F	
1902	9965 000 07786	⚠ FUSE RAD LT 4A 250V	/22
1902	2422 086 11115	⚠ FUSE RAD T 8A 250V	/37
1903	9965 000 07789	⚠ VOLTAGE SELECTOR	/21
1904	2422 086 11109	⚠ FUSE RAD T 6A3 250V	/21
1905	2422 132 07519	⚠ RELAY 1P 12V 16A OZ-SS L	
1907	9965 000 07786	⚠ FUSE RAD LT 4A 250V	/21
1950	4822 265 31015	⚠ MAINS SOCKET	/21/22
1951	2422 030 00328	⚠ MAINS SOCKET	/37

CAPACITORS

2700	2020 561 90365	100nF +80/-20% 50V	
2701	2020 561 90365	100nF +80/-20% 50V	
2702	4822 124 41584	100uF 20% 10V	
2703	4822 124 40207	100uF 20% 25V	
2704	5322 121 42578	100nF 5% 250V	
2705	5322 121 42578	100nF 5% 250V	
2706	2022 020 00737	6800uF 20% 50V	
2707	5322 121 42578	100nF 5% 250V	
2708	2022 020 00737	6800uF 20% 50V	
2709	5322 121 42578	100nF 5% 250V	
2710	5322 121 42578	100nF 5% 250V	
2711	2022 020 00782	6800uF 20% 35V	
2712	2020 012 93745	10000uF 20% 16V	
2713	4822 124 81151	22uF 50V	
2714	4822 126 12785	47nF 50V	
2715	2020 012 93741	100uF 20% 100V	
2900	4822 121 43526	47nF 5% 250V	
2902	2222 336 19106	⚠ 22nF 20% 275V	
2905	4822 121 51387	10nF 20% 16V	
2906	4822 121 51387	10nF 20% 16V	
2907	4822 124 40255	100uF 20% 63V	
2908	4822 121 10512	⚠ 220nF 20% 275V	/22
2909	4822 126 13589	⚠ 470nF 20% 275V	/21/37
2913	4822 126 12785	47nF 50V	
2916	2020 561 90365	100nF +80/-20% 50V	
2917	4822 126 11714	4,7nF 20%	
2918	4822 126 14088	⚠ 2,2nF 20% 250V	

RESISTORS

3700	4822 052 10101	⚠ 100R 5% 0,33W	
3701	4822 052 10101	⚠ 100R 5% 0,33W	
3702	4822 116 83884	47k 5% 0,5W	
3703	4822 116 52243	1k5 5% 0,5W	
3704	4822 116 52283	4k7 5% 0,5W	
3705	4822 050 23303	33k 1% 0,6W	
3706	4822 116 52219	330R 5% 0,5W	
3707	4822 052 10479	⚠ 47R 5% 0,33W	
3708	4822 116 52283	4k7 5% 0,5W	
3709	4822 116 52269	3k3 5% 0,5W	
3710	4822 116 52269	3k3 5% 0,5W	
3711	4822 116 83872	220R 5% 0,5W	
3900	4822 053 21106	⚠ 10M 5% 0,5W	/37
3901	4822 050 21003	10k 1% 0,6W	
3902	4822 050 24705	4M7 1% 0,6W	
3903	4822 116 52219	330R 5% 0,5W	
3904	4822 116 52234	100k 5% 0,5W	
3906	4822 116 83883	470R 5% 0,5W	
3909	4822 116 52272	330k 5% 0,5W	
3912	4822 053 21106	⚠ 10M 5% 0,5W	
3915	4822 116 83866	1M 5% 0,5W	
3916	4822 116 52256	2k2 5% 0,5W	
3917	4822 116 52234	100k 5% 0,5W	

COILS & FILTERS

5903	4822 157 11628	⚠ FIL MAINS
5904	2422 549 45157	⚠ TRAFO STANDBY 3A1631N
5929	4822 157 53473	IND FXD 1000uH 10%
5930	4822 157 52333	IND FXD 100uH 5%
5931	4822 157 53473	IND FXD 1000uH 10%

DIODES

6701	4822 130 30621	1N4148
6702	4822 130 30621	1N4148
6703	4822 130 30621	1N4148
6704	4822 130 30621	1N4148
6705	4822 130 30621	1N4148
6706	4822 130 30621	1N4148
6707	4822 130 30621	1N4148
6708	4822 130 30621	1N4148
6709	4822 130 30621	1N4148
6710	4822 130 30621	1N4148
6711	4822 130 34173	BZX79-C5V6
6712	9322 197 92682	BRIDGE GBJ10D
6714	4822 130 30621	1N4148
6715	4822 130 34142	BZX79-C33
6716	4822 130 34382	BZX79-C8V2
6718	4822 130 31878	1N5392
6719	4822 130 31878	1N5392
6720	4822 130 31878	1N5392
6721	4822 130 31878	1N5392
6722	4822 130 31878	1N5392
6723	4822 130 31878	1N5392
6900	4822 130 31878	1N4003G
6901	4822 130 31878	1N4003G
6902	4822 130 30621	1N4148

ELECTRICAL PARTS LIST - MAINS UCD BOARD

6905	4822 130 31878	1N4003G
6906	4822 130 31878	1N4003G
6912	4822 130 34145	BZX79-C39
6913	4822 130 31878	1N4003G
6916	4822 130 30621	1N4148
6917	4822 130 31878	1N4003G

TRANSISTORS & INTEGRATED CIRCUITS

7700	4822 130 40981	BC337-25
7701	4822 130 41327	BC327-40
7702	4822 130 41327	BC327-40
7900	4822 130 44568	BC557B
7901	4822 130 40959	BC547B
7902	4822 130 40855	BC337-40
7903	4822 130 44568	BC557B

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - REGULATOR UCD BOARD

MISCELLANEOUS

0002	3139 114 75361	HOLDER IC
0005	3139 114 71010	STOPPER HEATSINK

CAPACITORS

2500	4822 126 14585	100nF 10% 50V
2501	4822 124 81286	47uF 20% 16V
2502	4822 126 14585	100nF 10% 50V
2507	2222 580 15649	100nF 10% 50V
2508	4822 126 14585	100nF 10% 50V
2509	4822 124 81286	47uF 20% 16V
2510	4822 124 81286	47uF 20% 16V
2511	4822 124 41643	100uF 20% 16V
2512	4822 124 41643	100uF 20% 16V
2513	4822 124 80231	47uF 20% 16V

RESISTORS

3500	4822 051 30121	120R 5% 0,062W
3501	4822 051 30151	150R 5% 0,062W
3502	4822 051 30471	470R 5% 0,062W
3503	4822 051 30471	470R 5% 0,062W
3510	4822 051 30181	180R 5% 0,062W
3511	4822 051 30152	1k5 5% 0,062W
3512	4822 051 30479	47R 5% 0,062W
3513	4822 116 83872	220R 5% 0,5W
3514	4822 052 10568	⚠ 5R6 5% 0,33W
3515	4822 116 83883	470R 5% 0,5W
3516	4822 050 11002	1k 1% 0,4W
3517	4822 117 12063	NTC DC 5W 10k 5%
3519	4822 051 30682	6k8 5% 0,062W
3520	4822 051 30153	15k 5% 0,062W
3522	4822 051 30102	1k 5% 0,062W
3523	4822 051 30102	1k 5% 0,062W
3524	4822 117 13632	100k 1% 0,62W

DIODES

6501	4822 130 34174	BZX79-C4V7
6502	4822 130 11397	BAS316
6503	4822 130 11397	BAS316
6504	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7500	4822 209 81351	IC LM317P
7504	4822 209 81351	IC LM317P
7505	4822 130 41246	BC327-25
7506	5322 130 60159	BC847B

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - SPEAKER UCD BOARD

MISCELLANEOUS

1300	4822 267 31176	SOC CLICK 4P

CAPACITORS

2300	4822 121 41857	10nF 5% 250V
2301	4822 121 41857	10nF 5% 250V
2302	4822 121 41857	10nF 5% 250V
2303	4822 121 41857	10nF 5% 250V
2304	4822 121 43526	47nF 5% 250V
2305	4822 121 43526	47nF 5% 250V

Note : Only the parts mentioned in this list are normal service spare parts.

LECTRICAL PARTS LIST - ASSEMBLY UCD BTL

02	3139 110 36161	FFC FOIL 06P/100/06P AD

LECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)

ISCELLANEOUS

03	3104 214 39321	TO-220 HOLDER
04	3104 214 39331	SPACER
201	4822 267 10953	FLEX CONNECTOR 7P
202	4822 267 10731	FLEX CONNECTOR 6P
203	2422 540 98578	RES CER 410kHz
204	2422 540 98552	RES CER 375kHz

APACITORS

100	5322 126 11583	10nF 10% 50V
101	2222 580 15649	100nF 10% 50V
102	2222 580 15649	100nF 10% 50V
107	4822 126 13883	220pF 5% 50V
108	4822 126 13193	4,7nF 10% 63V
109	5322 126 11583	10nF 10% 50V
110	4822 126 13883	220pF 5% 50V
111	4822 126 13193	4,7nF 10% 63V
112	2222 580 15649	100nF 10% 50V
113	2222 580 15649	100nF 10% 50V
114	3198 026 51020	1000uF 20% 50V
115	2222 580 15649	100nF 10% 50V
116	4822 126 13193	4,7nF 10% 63V
117	4822 124 81151	22uF 50V
118	4822 124 41643	100uF 20% 16V
119	3198 017 44740	470nF 10V
120	2020 557 90726	100pF 5% 100V
121	3198 017 44740	470nF 10V
122	3198 017 44740	470nF 10V
123	3198 026 51020	1000uF 20% 50V
124	4822 124 81151	22uF 50V
125	2222 580 15649	100nF 10% 50V
126	4822 126 13193	4,7nF 10% 63V
127	2020 557 90726	100pF 5% 100V
128	5322 121 42498	680nF 5% 63V
129	2238 586 15635	8,2nF 10% 50V
150	5322 126 11583	10nF 10% 50V
151	4822 126 13883	220pF 5% 50V
152	4822 126 13193	4,7nF 10% 63V
153	5322 126 11583	10nF 10% 50V
154	4822 126 13883	220pF 5% 50V
155	4822 126 13193	4,7nF 10% 63V
156	2222 580 15649	100nF 10% 50V
157	2222 580 15649	100nF 10% 50V
158	3198 017 44740	470nF 10V
159	4822 124 41643	100uF 20% 16V
160	2020 557 90726	100pF 5% 100V
2161	3198 017 44740	470nF 10V
2162	3198 017 44740	470nF 10V
2163	2020 557 90726	100pF 5% 100V
2164	3198 026 51020	1000uF 20% 50V
2165	2222 580 15649	100nF 10% 50V
2166	4822 124 81151	22uF 50V
2167	4822 126 13193	4,7nF 10% 63V
2168	3198 026 51020	1000uF 20% 50V
2169	2222 580 15649	100nF 10% 50V
2170	4822 124 81151	22uF 50V
2171	4822 126 13193	4,7nF 10% 63V
2172	5322 121 42498	680nF 5% 63V
2173	2238 586 15635	8,2nF 10% 50V
2201	5322 126 11578	1nF 10% 50V
2202	5322 126 11583	10nF 10% 50V
2203	5322 122 33861	120pF 10% 50V
2204	4822 126 13881	470pF 5% 50V
2205	5322 126 11583	10nF 10% 50V
2206	4822 126 13881	470pF 5% 50V
2207	2222 580 15649	100nF 10% 50V
2208	3198 017 41050	1uF 10V
2209	3198 017 41050	1uF 10V
2210	3198 017 44740	470nF 10V
2211	2020 552 94427	100pF 5% 50V
2212	5322 126 11578	1nF 10% 50V
2213	5322 126 11578	1nF 10% 50V
2214	5322 126 11578	1nF 10% 50V
2215	5322 126 11578	1nF 10% 50V
2216	5322 126 11578	1nF 10% 50V

RESISTORS

3100	4822 051 30123	12k 5% 0,062W
3101	4822 051 30223	22k 5% 0,062W
3102	4822 051 30222	2k2 5% 0,062W
3103	4822 051 30479	47R 5% 0,062W
3104	4822 051 30479	47R 5% 0,062W
3105	4822 051 30222	2k2 5% 0,062W
3112	4822 051 30222	2k2 5% 0,062W
3113	4822 051 30681	680R 5% 0,062W
3114	4822 051 30123	12k 5% 0,062W
3115	4822 051 30223	22k 5% 0,062W
3116	4822 051 30222	2k2 5% 0,062W
3117	4822 051 30681	680R 5% 0,062W
3118	4822 051 30222	2k2 5% 0,062W
3119	4822 051 30221	220R 5% 0,062W

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)

3120	4822 117 12925	47k 1% 0,063W
3121	4822 117 12925	47k 1% 0,063W
3122	4822 101 11382	220R 30% 1W
3123	4822 051 30681	680R 5% 0,062W
3124	4822 051 30561	560R 5% 0,062W
3125	4822 051 30681	680R 5% 0,062W
3126	4822 051 30109	10R 5% 0,062W
3127	2322 702 60395	RST SM 0603 3M9 5%
3128	4822 051 30109	10R 5% 0,062W
3129	2322 702 60565	RST SM 0603 5M6 5%
3130	4822 051 20333	33k 5% 0,1W
3131	2122 118 06384	RST SM 1218 R047 5%
3132	4822 051 30271	270R 5% 0,062W
3134	4822 051 30391	390R 5% 0,062W
3135	2322 702 60279	RST SM 0603 27R 5%
3136	4822 051 30102	1k 5% 0,062W
3137	4822 051 20129	12R 5% 0,1W
3138	4822 051 30391	390R 5% 0,062W
3139	2322 702 60279	RST SM 0603 27R 5%
3140	4822 051 30102	1k 5% 0,062W
3141	2122 118 06384	RST SM 1218 R047 5%
3142	4822 051 30271	270R 5% 0,062W
3144	4822 051 20129	12R 5% 0,1W
3145	2122 663 00025	⚠ PTC SM 0805 40V 3k9 10%
3150	4822 051 30123	12k 5% 0,062W
3151	4822 051 30223	22k 5% 0,062W
3152	4822 051 30222	2k2 5% 0,062W
3153	4822 051 30681	680R 5% 0,062W
3155	4822 051 30123	12k 5% 0,062W
3156	4822 051 30223	22k 5% 0,062W
3157	4822 051 30222	2k2 5% 0,062W
3158	4822 051 30681	680R 5% 0,062W
3161	4822 051 30222	2k2 5% 0,062W
3162	4822 051 30221	220R 5% 0,062W
3163	4822 117 12925	47k 1% 0,063W
3164	4822 051 30109	10R 5% 0,062W
3165	2322 702 60565	RST SM 0603 5M6 5%
3166	4822 117 12925	47k 1% 0,063W
3167	4822 051 30681	680R 5% 0,062W
3168	4822 051 30561	560R 5% 0,062W
3169	4822 051 30681	680R 5% 0,062W
3170	4822 051 30109	10R 5% 0,062W
3171	2322 702 60395	RST SM 0603 3M9 5%
3173	4822 051 30391	390R 5% 0,062W
3174	2322 702 60279	RST SM 0603 27R 5%
3175	4822 051 30102	1k 5% 0,062W
3176	4822 051 20333	33k 5% 0,1W
3177	4822 051 20129	12R 5% 0,1W
3178	4822 051 30391	390R 5% 0,062W
3179	2322 702 60279	RST SM 0603 27R 5%
3180	4822 051 30102	1k 5% 0,062W
3181	4822 051 20129	12R 5% 0,1W
3182	2122 118 06384	RST SM 1218 R047 5%
3183	4822 051 30109	10R 5% 0,062W
3184	2122 118 06384	RST SM 1218 R047 5%
3185	4822 051 30271	270R 5% 0,062W
3187	4822 051 30271	270R 5% 0,062W
3188	2122 663 00025	⚠ PTC SM 0805 40V 3k9 10%
3190	4822 117 12063	⚠ NTC DC 5W 10k 5%
3193	4822 117 10834	47k 1% 0,1W
3194	4822 117 10834	47k 1% 0,1W
3195	2322 615 33472	NTC SM 0603 0W125 4k7 5%
3196	2322 615 33472	NTC SM 0603 0W125 4k7 5%
3197	2322 615 33472	NTC SM 0603 0W125 4k7 5%
3198	2322 615 33472	NTC SM 0603 0W125 4k7 5%
3201	4822 051 10223	22k 2% 0,25W
3202	4822 051 10223	22k 2% 0,25W
3203	4822 117 13632	100k 1% 0,62W
3204	4822 051 10223	22k 2% 0,25W
3205	4822 051 30105	1M 5% 0,062W
3206	4822 051 30105	1M 5% 0,062W
3207	4822 051 30103	10k 5% 0,062W
3208	2322 702 60184	RST SM 0603 180k 5%
3209	2322 702 60184	RST SM 0603 180k 5%
3210	4822 117 12889	270k 1% 0,063W
3211	4822 117 12889	270k 1% 0,063W
3212	4822 117 12864	82k 5% 0,6W
3213	4822 051 30103	10k 5% 0,062W
3214	4822 051 30105	1M 5% 0,062W
3215	4822 117 13632	100k 1% 0,62W
3216	4822 117 13632	100k 1% 0,62W
3217	4822 051 30563	56k 5% 0,062W
3218	4822 117 13632	100k 1% 0,62W
3219	4822 117 13632	100k 1% 0,62W
3220	4822 117 13632	100k 1% 0,62W
3222	4822 117 13632	100k 1% 0,62W
3223	4822 117 13632	100k 1% 0,62W
3224	4822 051 30103	10k 5% 0,062W
3225	4822 051 30105	1M 5% 0,062W
3226	4822 051 30105	1M 5% 0,062W
3231	4822 051 30103	10k 5% 0,062W
3232	4822 051 30103	10k 5% 0,062W
3235	4822 051 30333	33k 5% 0,062W
3236	4822 051 30101	100R 5% 0,062W
3237	4822 051 30101	100R 5% 0,062W
3238	4822 051 30105	1M 5% 0,062W
3239	4822 051 30105	1M 5% 0,062W

COILS & FILTERS

5100	4822 157 11411	IND FXD BEAD 100MHz 83R
5102	4822 157 11411	IND FXD BEAD 100MHz 83R
5105	3104 218 15671	IND FXD SC4684-145 PM1
5151	4822 157 11411	IND FXD BEAD 100MHz 83R
5152	4822 157 11411	IND FXD BEAD 100MHz 83R

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL MASTER)

COILS & FILTERS

5155	3104 218 15671	IND FXD SC4684-145 PM1

DIODES

6101	4822 130 11528	1PS76SB10
6102	4822 130 11528	1PS76SB10
6103	9340 548 47115	PDZ3.3B
6104	9322 198 95685	DIO SIG SM 1SS370
6105	9322 198 95685	DIO SIG SM 1SS370
6106	4822 130 11528	1PS76SB10
6107	4822 130 11397	BAS316
6108	9340 548 61115	DIO REG SM PDZ12B
6109	4822 130 11528	1PS76SB10
6110	4822 130 11397	BAS316
6151	4822 130 11528	1PS76SB10
6152	4822 130 11528	1PS76SB10
6153	4822 130 11528	1PS76SB10
6154	9340 548 61115	DIO REG SM PDZ12B
6155	4822 130 11397	BAS316
6156	9340 548 47115	PDZ3.3B
6157	9322 198 95685	DIO SIG SM 1SS370
6158	9322 198 95685	DIO SIG SM 1SS370
6159	4822 130 11528	1PS76SB10
6160	4822 130 11397	BAS316
6200	4822 130 11551	PDZ10B
6201	3198 020 55680	DIO REG SM PDZ5.6B
6202	4822 130 11551	PDZ10B
6203	4822 130 11397	BAS316
6204	4822 130 11397	BAS316
6205	4822 130 11397	BAS316
6206	4822 130 11397	BAS316
6210	4822 130 11397	BAS316
6211	4822 130 11397	BAS316

TRANSISTORS & INTEGRATED CIRCUITS

7100	9340 218 20135	TRA SIG SM BC856BW
7101	4822 130 41691	TRA SIG BC556B
7102	9340 218 60115	TRA SIG SM BC857CW
7103	9340 217 80115	TRA SIG SM BC847CW
7104	9340 217 80115	TRA SIG SM BC847CW
7105	9340 218 20135	TRA SIG SM BC856BW
7106	9340 217 80115	TRA SIG SM BC847CW
7107	9340 217 80115	TRA SIG SM BC847CW
7108	4822 130 43233	TRA SIG 2SC2240
7109	9340 217 80115	TRA SIG SM BC847CW
7110	9340 218 20135	TRA SIG SM BC856BW
7111	9340 218 60115	TRA SIG SM BC857CW
7112	9322 173 29687	FET POW STP14NF12FP
7113	9322 198 96685	TRA SIG SM 2SA1954B
7114	9340 218 60115	TRA SIG SM BC857CW
7115	9322 198 96685	TRA SIG SM 2SA1954B
7116	9340 217 40135	TRA SIG SM BC846BW
7117	9322 173 29687	FET POW STP14NF12FP
7150	9340 218 60115	TRA SIG SM BC857CW
7151	4822 130 41691	TRA SIG BC556B
7152	9340 217 80115	TRA SIG SM BC847CW
7153	9340 217 80115	TRA SIG SM BC847CW
7154	9340 217 80115	TRA SIG SM BC847CW
7155	9340 217 80115	TRA SIG SM BC847CW
7156	9340 218 20135	TRA SIG SM BC856BW
7157	9340 218 20135	TRA SIG SM BC856BW
7158	4822 130 43233	TRA SIG 2SC2240
7159	9340 217 80115	TRA SIG SM BC847CW
7160	9340 218 60115	TRA SIG SM BC857CW
7161	9322 198 96685	TRA SIG SM 2SA1954B
7162	9322 173 29687	FET POW STP14NF12FP
7163	9340 218 60115	TRA SIG SM BC857CW
7164	9322 198 96685	TRA SIG SM 2SA1954B
7165	9322 173 29687	FET POW STP14NF12FP
7167	9340 217 40135	TRA SIG SM BC846BW
7168	9340 218 20135	TRA SIG SM BC856BW
7200	9339 753 30135	TRA POW SM PZT2222A
7201	9340 217 40135	TRA SIG SM BC846BW
7202	3198 010 42310	TRA SIG SM BC847BW
7203	3198 010 42320	TRA SIG SM BC857BW
7204	9340 217 40135	TRA SIG SM BC846BW
7205	9340 217 80115	TRA SIG SM BC847CW
7206	9340 218 60115	TRA SIG SM BC857CW
7207	9340 218 60115	TRA SIG SM BC857CW
7208	9340 218 60115	TRA SIG SM BC857CW
7209	9340 217 80115	TRA SIG SM BC847CW
7210	5322 209 11548	IC SM 74HC14D
7211	9339 753 30135	TRA POW SM PZT2222A
7212	9340 217 80115	TRA SIG SM BC847CW

Note : Only the parts mentioned in this list are normal service spare parts.

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)

MISCELLANEOUS

0003	3104 214 39321	TO-220 HOLDER
0004	3104 214 39331	SPACER
1202	4822 267 10731	FLEX CONNECTOR 6P
1203	2422 540 98578	RES CER 410kHz
1204	2422 540 98552	RES CER 375kHz

CAPACITORS

2100	5322 126 11583	10nF 10% 50V
2101	2222 580 15649	100nF 10% 50V
2102	2222 580 15649	100nF 10% 50V
2107	4822 126 13883	220pF 5% 50V
2108	4822 126 13193	4,7nF 10% 63V
2109	5322 126 11583	10nF 10% 50V
2110	4822 126 13883	220pF 5% 50V
2111	4822 126 13193	4,7nF 10% 63V
2112	2222 580 15649	100nF 10% 50V
2113	2222 580 15649	100nF 10% 50V
2114	3198 026 51020	1000uF 20% 50V
2115	2222 580 15649	100nF 10% 50V
2116	4822 126 13193	4,7nF 10% 63V
2117	4822 124 81151	22uF 50V
2118	4822 124 41643	100uF 20% 16V
2119	3198 017 44740	470nF 10V
2120	2020 557 90726	100pF 5% 100V
2121	3198 017 44740	470nF 10V
2122	3198 017 44740	470nF 10V
2123	3198 026 51020	1000uF 20% 50V
2124	4822 124 81151	22uF 50V
2125	2222 580 15649	100nF 10% 50V
2126	4822 126 13193	4,7nF 10% 63V
2127	2020 557 90726	100pF 5% 100V
2128	5322 121 42498	680nF 5% 63V
2129	2238 586 15635	8,2nF 10% 50V
2150	5322 126 11583	10nF 10% 50V
2151	4822 126 13883	220pF 5% 50V
2152	4822 126 13193	4,7nF 10% 63V
2153	5322 126 11583	10nF 10% 50V
2154	4822 126 13883	220pF 5% 50V
2155	4822 126 13193	4,7nF 10% 63V
2156	2222 580 15649	100nF 10% 50V
2157	2222 580 15649	100nF 10% 50V
2158	3198 017 44740	470nF 10V
2159	4822 124 41643	100uF 20% 16V
2160	2020 557 90726	100pF 5% 100V
2161	3198 017 44740	470nF 10V
2162	3198 017 44740	470nF 10V
2163	2020 557 90726	100pF 5% 100V
2164	3198 026 51020	1000uF 20% 50V
2165	2222 580 15649	100nF 10% 50V
2166	4822 124 81151	22uF 50V
2167	4822 126 13193	4,7nF 10% 63V
2168	3198 026 51020	1000uF 20% 50V
2169	2222 580 15649	100nF 10% 50V
2170	4822 124 81151	22uF 50V
2171	4822 126 13193	4,7nF 10% 63V
2172	5322 121 42498	680nF 5% 63V
2173	2238 586 15635	8,2nF 10% 50V
2201	5322 126 11578	1nF 10% 50V
2202	5322 126 11583	10nF 10% 50V
2203	5322 122 33861	120pF 10% 50V
2204	4822 126 13881	470pF 5% 50V
2205	5322 126 11583	10nF 10% 50V
2206	4822 126 13881	470pF 5% 50V
2207	2222 580 15649	100nF 10% 50V
2208	3198 017 41050	1uF 10V
2209	3198 017 41050	1uF 10V
2210	3198 017 44740	470nF 10V
2211	2020 552 94427	100pF 5% 50V
2212	5322 126 11578	1nF 10% 50V
2213	5322 126 11578	1nF 10% 50V
2214	5322 126 11578	1nF 10% 50V
2215	5322 126 11578	1nF 10% 50V
2216	5322 126 11578	1nF 10% 50V

RESISTORS

3100	4822 051 30123	12k 5% 0,062W
3101	4822 051 30223	22k 5% 0,062W
3102	4822 051 30222	2k2 5% 0,062W
3103	4822 051 30479	47R 5% 0,062W
3104	4822 051 30479	47R 5% 0,062W
3105	4822 051 30222	2k2 5% 0,062W
3112	4822 051 30222	2k2 5% 0,062W
3113	4822 051 30681	680R 5% 0,062W
3114	4822 051 30123	12k 5% 0,062W
3115	4822 051 30223	22k 5% 0,062W
3116	4822 051 30222	2k2 5% 0,062W
3117	4822 051 30681	680R 5% 0,062W
3118	4822 051 30222	2k2 5% 0,062W
3119	4822 051 30221	220R 5% 0,062W
3120	4822 117 12925	47k 1% 0,063W
3121	4822 117 12925	47k 1% 0,063W
3122	4822 101 11382	220R 30% 1W
3123	4822 051 30681	680R 5% 0,062W
3124	4822 051 30561	560R 5% 0,062W
3125	4822 051 30681	680R 5% 0,062W
3126	4822 051 30109	10R 5% 0,062W
3127	2322 702 60395	RST SM 0603 3M9 5%
3128	4822 051 30109	10R 5% 0,062W
3129	2322 702 60565	RST SM 0603 5M6 5%
3130	4822 051 20333	33k 5% 0,1W
3131	2122 118 06384	RST SM 1218 R047 5%
3132	4822 051 30271	270R 5% 0,062W
3134	4822 051 30391	390R 5% 0,062W
3135	2322 702 60279	RST SM 0603 27R 5%

LECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)

ESISTORS

136	4822 051 30102	1k 5% 0,062W
137	4822 051 20129	12R 5% 0,1W
138	4822 051 30391	390R 5% 0,062W
139	2322 702 60279	RST SM 0603 27R 5%
140	4822 051 30102	1k 5% 0,062W
141	2122 118 06384	RST SM 1218 R047 5%
142	4822 051 30271	270R 5% 0,062W
144	4822 051 20129	12R 5% 0,1W
145	2122 663 00025	△ PTC SM 0805 40V 3k9 10%
150	4822 051 30123	12k 5% 0,062W
151	4822 051 30223	22k 5% 0,062W
152	4822 051 30222	2k2 5% 0,062W
153	4822 051 30681	680R 5% 0,062W
155	4822 051 30123	12k 5% 0,062W
156	4822 051 30223	22k 5% 0,062W
157	4822 051 30222	2k2 5% 0,062W
158	4822 051 30681	680R 5% 0,062W
161	4822 051 30222	2k2 5% 0,062W
162	4822 051 30221	220R 5% 0,062W
163	4822 117 12925	47k 1% 0,063W
164	4822 051 30109	10R 5% 0,062W
165	2322 702 60565	RST SM 0603 5M6 5%
166	4822 117 12925	47k 1% 0,063W
167	4822 051 30681	680R 5% 0,062W
168	4822 051 30561	560R 5% 0,062W
169	4822 051 30681	680R 5% 0,062W
170	4822 051 30109	10R 5% 0,062W
171	2322 702 60395	RST SM 0603 3M9 5%
173	4822 051 30391	390R 5% 0,062W
174	2322 702 60279	RST SM 0603 27R 5%
175	4822 051 30102	1k 5% 0,062W
176	4822 051 20333	33k 5% 0,1W
177	4822 051 20129	12R 5% 0,1W
178	4822 051 30391	390R 5% 0,062W
179	2322 702 60279	RST SM 0603 27R 5%
180	4822 051 30102	1k 5% 0,062W
181	4822 051 20129	12R 5% 0,1W
182	2122 118 06384	RST SM 1218 R047 5%
183	4822 051 30109	10R 5% 0,062W
184	2122 118 06384	RST SM 1218 R047 5%
185	4822 051 30271	270R 5% 0,062W
187	4822 051 30271	270R 5% 0,062W
188	2122 663 00025	△ PTC SM 0805 40V 3k9 10%
193	4822 117 10834	47k 1% 0,1W
194	4822 117 10834	47k 1% 0,1W
195	2322 615 33472	NTC SM 0603 0W125 4k7 5%
196	2322 615 33472	NTC SM 0603 0W125 4k7 5%
197	2322 615 33472	NTC SM 0603 0W125 4k7 5%
198	2322 615 33472	NTC SM 0603 0W125 4k7 5%
201	4822 051 10223	22k 2% 0,25W
202	4822 051 10223	22k 2% 0,25W
203	4822 117 13632	100k 1% 0,62W
3204	4822 051 10223	22k 2% 0,25W
3205	4822 051 30105	1M 5% 0,062W
3206	4822 051 30105	1M 5% 0,062W
3207	4822 051 30103	10k 5% 0,062W
3208	2322 702 60184	RST SM 0603 180k 5%
3209	2322 702 60184	RST SM 0603 180k 5%
3210	4822 117 12889	270k 1% 0,063W
3211	4822 117 12889	270k 1% 0,063W
3212	4822 117 12864	82k 5% 0,6W
3213	4822 051 30103	10k 5% 0,062W
3214	4822 051 30105	1M 5% 0,062W
3215	4822 117 13632	100k 1% 0,62W
3216	4822 117 13632	100k 1% 0,62W
3217	4822 051 30563	56k 5% 0,062W
3218	4822 117 13632	100k 1% 0,62W
3219	4822 117 13632	100k 1% 0,62W
3220	4822 117 13632	100k 1% 0,62W
3222	4822 117 13632	100k 1% 0,62W
3223	4822 117 13632	100k 1% 0,62W
3224	4822 051 30103	10k 5% 0,062W
3225	4822 051 30105	1M 5% 0,062W
3226	4822 051 30105	1M 5% 0,062W
3231	4822 051 30103	10k 5% 0,062W
3232	4822 051 30103	10k 5% 0,062W
3235	4822 051 30333	33k 5% 0,062W
3236	4822 051 30101	100R 5% 0,062W
3237	4822 051 30101	100R 5% 0,062W
3238	4822 051 30105	1M 5% 0,062W
3239	4822 051 30105	1M 5% 0,062W
4201	4822 051 30008	0R JUMPER 0603
4202	4822 051 30008	0R JUMPER 0603

COILS & FILTERS

5100	4822 157 11411	IND FXD BEAD 100MHz 83R
5102	4822 157 11411	IND FXD BEAD 100MHz 83R
5105	3104 218 15671	IND FXD SC4684-145 PM1
5151	4822 157 11411	IND FXD BEAD 100MHz 83R
5152	4822 157 11411	IND FXD BEAD 100MHz 83R
5155	3104 218 15671	IND FXD SC4684-145 PM1

DIODES

6101	4822 130 11528	1PS76SB10
6102	4822 130 11528	1PS76SB10
6103	9340 548 47115	PDZ3.3B
6104	9322 198 95685	DIO SIG SM 1SS370
6105	9322 198 95685	DIO SIG SM 1SS370
6106	4822 130 11528	1PS76SB10
6107	4822 130 11397	BAS316
6108	9340 548 61115	DIO REG SM PDZ12B
6109	4822 130 11528	1PS76SB10
6110	4822 130 11397	BAS316
6151	4822 130 11528	1PS76SB10
6152	4822 130 11528	1PS76SB10
6153	4822 130 11528	1PS76SB10
6154	9340 548 61115	DIO REG SM PDZ12B
6155	4822 130 11397	BAS316
6156	9340 548 47115	PDZ3.3B
6157	9322 198 95685	DIO SIG SM 1SS370
6158	9322 198 95685	DIO SIG SM 1SS370
6159	4822 130 11528	1PS76SB10
6160	4822 130 11397	BAS316
6200	4822 130 11551	PDZ10B
6201	3198 020 55680	DIO REG SM PDZ5.6B
6202	4822 130 11551	PDZ10B
6203	4822 130 11397	BAS316
6204	4822 130 11397	BAS316
6205	4822 130 11397	BAS316
6206	4822 130 11397	BAS316
6210	4822 130 11397	BAS316
6211	4822 130 11397	BAS316

ELECTRICAL PARTS LIST - AMPLIFIER UCD BOARD (BTL SLAVE)

TRANSISTORS & INTEGRATED CIRCUITS

7100	9340 218 20135	TRA SIG SM BC856BW
7101	4822 130 41691	TRA SIG BC556B
7102	9340 218 60115	TRA SIG SM BC857CW
7103	9340 217 80115	TRA SIG SM BC847CW
7104	9340 217 80115	TRA SIG SM BC847CW
7105	9340 218 20135	TRA SIG SM BC856BW
7106	9340 217 80115	TRA SIG SM BC847CW
7107	9340 217 80115	TRA SIG SM BC847CW
7108	4822 130 43233	TRA SIG 2SC2240
7109	9340 217 80115	TRA SIG SM BC847CW
7110	9340 218 20135	TRA SIG SM BC856BW
7111	9340 218 60115	TRA SIG SM BC857CW
7112	9322 173 29687	FET POW STP14NF12FP
7113	9322 198 96685	TRA SIG SM 2SA1954B
7114	9340 218 60115	TRA SIG SM BC857CW
7115	9322 198 96685	TRA SIG SM 2SA1954B
7116	9340 217 40135	TRA SIG SM BC846BW
7117	9322 173 29687	FET POW STP14NF12FP
7150	9340 218 60115	TRA SIG SM BC857CW
7151	4822 130 41691	TRA SIG BC556B
7152	9340 217 80115	TRA SIG SM BC847CW
7153	9340 217 80115	TRA SIG SM BC847CW
7154	9340 217 80115	TRA SIG SM BC847CW
7155	9340 217 80115	TRA SIG SM BC847CW
7156	9340 218 20135	TRA SIG SM BC856BW
7157	9340 218 20135	TRA SIG SM BC856BW
7158	4822 130 43233	TRA SIG 2SC2240
7159	9340 217 80115	TRA SIG SM BC847CW
7160	9340 218 60115	TRA SIG SM BC857CW
7161	9322 198 96685	TRA SIG SM 2SA1954B
7162	9322 173 29687	FET POW STP14NF12FP
7163	9340 218 60115	TRA SIG SM BC857CW
7164	9322 198 96685	TRA SIG SM 2SA1954B
7165	9322 173 29687	FET POW STP14NF12FP
7167	9340 217 40135	TRA SIG SM BC846BW
7168	9340 218 20135	TRA SIG SM BC856BW
7200	9339 753 30135	TRA POW SM PZT2222A
7201	9340 217 40135	TRA SIG SM BC846BW
7202	3198 010 42310	TRA SIG SM BC847BW
7203	3198 010 42320	TRA SIG SM BC857BW
7204	9340 217 40135	TRA SIG SM BC846BW
7205	9340 217 80115	TRA SIG SM BC847CW
7206	9340 218 60115	TRA SIG SM BC857CW
7207	9340 218 60115	TRA SIG SM BC857CW
7208	9340 218 60115	TRA SIG SM BC857CW
7209	9340 217 80115	TRA SIG SM BC847CW
7210	5322 209 11548	IC SM 74HC14D
7211	9339 753 30135	TRA POW SM PZT2222A
7212	9340 217 80115	TRA SIG SM BC847CW

Note : Only the parts mentioned in this list are normal service spare parts.

AF12 BOARD

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BRIEF INTRODUCTION OF THE AF12 BOARD

The AF12 Board consists of the following features :

a. TDA7468D IC
TDA7468D IC (7501) which includes functions such as source selection, loudness control, dynamic bass control, treble control, volume control and muting function. Sound features such as ALC, DBB, DSC and IS are controllable via I^{2}C Bus from the microprocessor.

The TDA7468D IC caters for 4 input sources namely TUNER, PC LINK, CD and AUX. It also has a Mic mix input. In our application, software will switch the input source to previous source MUTE during STANDBY mode and some other occasions where noise from other input sources is undesirable.

Note that the input to the TDA7468D IC must be ac coupled to prevent 'polp' noise.
Input networks are included to provide appropriate attenuation for various sources.

b. SIMPLE MIC MIXING
The AF12 Board has provisions which can be configured to cater for one of the following:
MM : which caters for Mic mixing with additional Mic amplifier board.
NM : non Mic mixing.

c. LINE OUT
Line out cinch socket for connection to external amplifier.

d. SUB-WOOFER OUT
Sub-woofer out cinch socket for connection to active sub-woofer speaker.

e. INCREDIBLE SURROUND
Incredible surround effect using transistor circuit to create phase shifting and spatial effect.

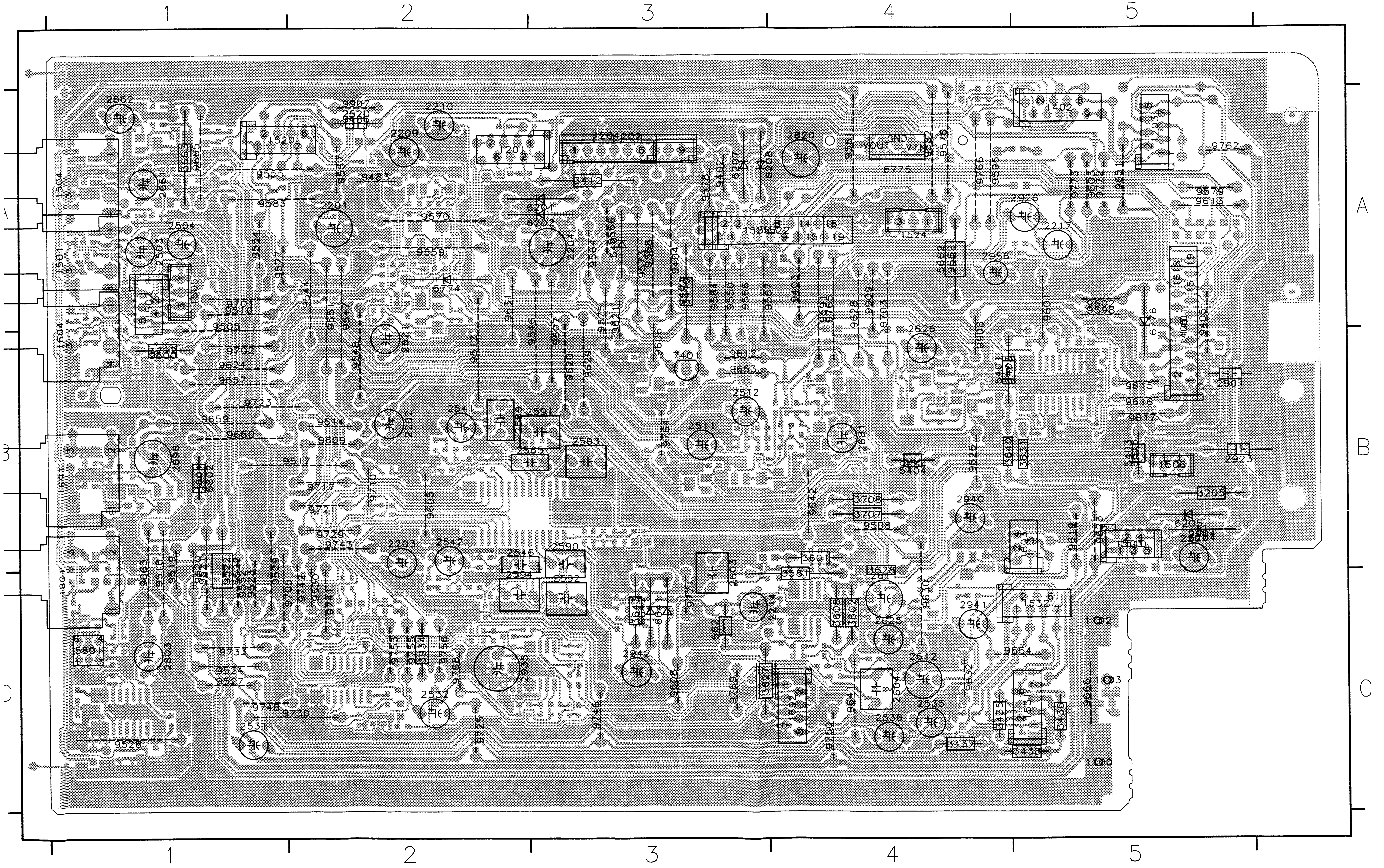
f. HEADPHONE AMPLIFIER
Headphone amplifier to drive 32 ohm to 1kohm headphone.

g. CD STANDBY CONTROL
CD Standby Control circuit which switches on the supply to CD servo control IC, digital out buffer IC, HF circuit and the laser light pen in CD mode only.

h. ATTENUATION NETWORK
Attenuation network is provided at the output of the AF12 Board for interfacing with power board of different output power.

i. CD DIGITAL OUT
CD Digital out cinch socket for connection to external digital audio decoders.

F12 BOARD - COMPONENT LAYOUT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VOUT
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1522
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7401
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9664
9666

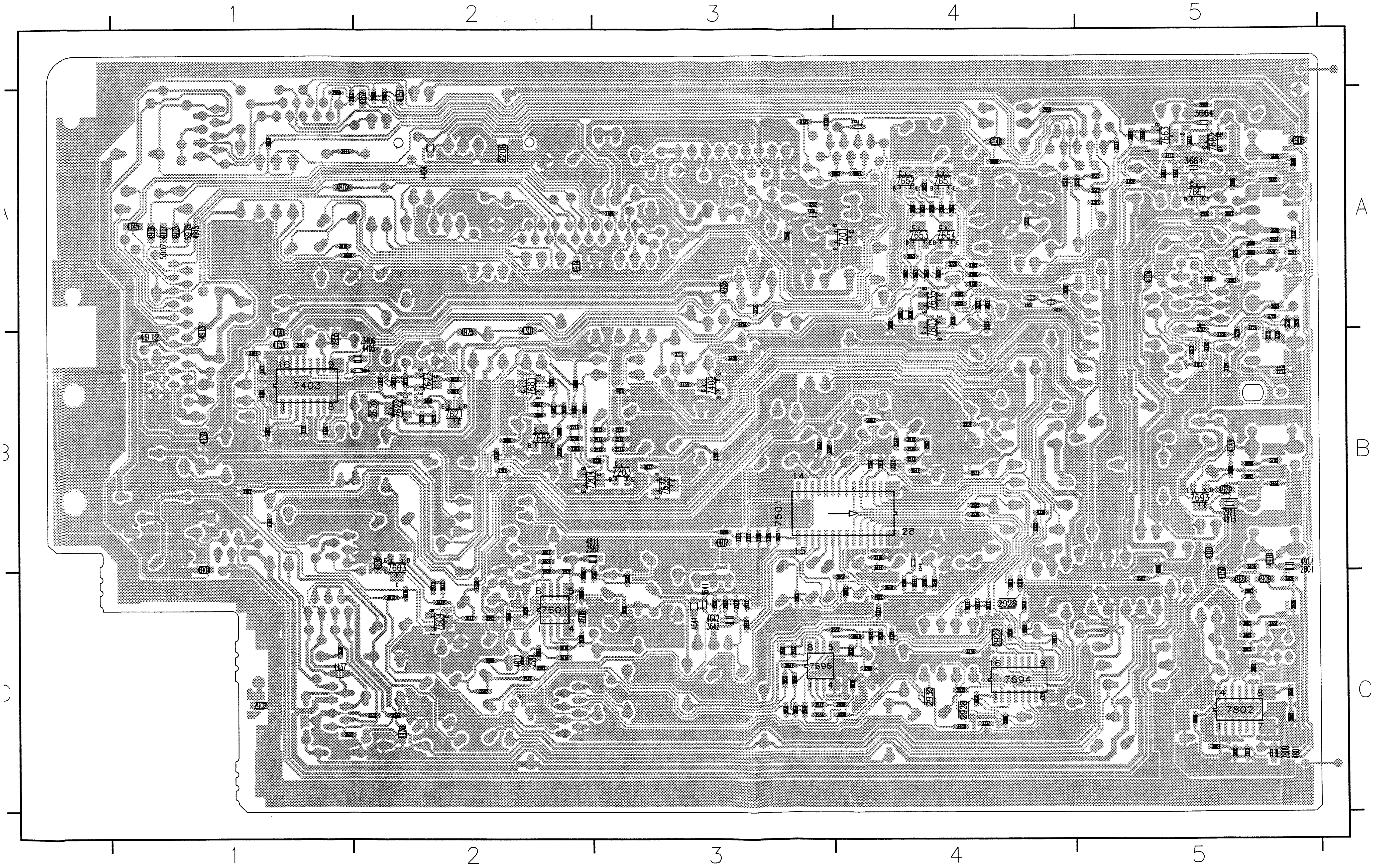
AF12 BOARD - COMPONENT LAYOUT (MAPPING)

1100	C5	3581	C4	9587	A4
1102	C5	3601	B4	9591	A4
1103	C5	3602	C4	9596	A4
1201	A2	3608	C4	9598	A5
1202	A3	3627	C3	9600	B1
1203	A5	3628	B4	9601	A5
1204	A3	3631	B5	9602	A5
1401	A5	3640	B4	9603	A5
1402	A5	3643	C3	9605	B2
1405	B5	3663	A1	9606	B3
1501	A1	3707	B4	9607	B3
1502	A1	3708	B4	9608	C3
1503	B5	3722	B1	9609	B2
1504	A1	3804	B1	9612	B3
1505	A1	3934	C2	9613	A5
1506	B5	5401	B4	9615	B5
1510	B5	5403	B5	9616	B5
1520	A1	5404	B4	9617	B5
1522	A4	5522	B1	9618	B5
1523	A3	5621	C3	9619	B5
1524	A4	5662	A4	9620	B3
1525	A3	5801	C1	9621	A3
1531	C5	5802	B1	9623	B5
1532	C5	6201	A3	9624	B1
1603	B5	6202	A3	9626	B4
1604	B1	6204	B5	9628	A4
1691	B1	6205	B5	9629	B3
1692	C4	6207	A3	9630	C4
1801	C1	6208	A4	9631	A2
2201	A2	6401	A3	9632	C4
2202	B2	6641	C3	9641	C4
2203	B2	6642	C3	9642	B4
2204	A3	6774	A2	9651	A5
2207	B5	6775	A4	9653	B3
2209	A2	6776	A5	9654	B4
2210	A2	7401	B3	9657	B1
2214	C4	9401	A3	9659	B1
2217	A5	9402	A3	9660	B1
2503	A1	9403	A4	9662	A4
2504	A1	9404	A3	9663	C1
2511	B3	9405	A5	9664	C5
2512	B3	9483	A2	9665	A1
2520	A2	9486	A2	9666	C5
2531	C1	9505	A1	9701	A1
2532	C2	9508	B4	9702	B1
2535	C4	9510	A1	9703	A4
2536	C4	9512	B2	9705	C2
2541	B2	9514	B2	9710	B2
2542	B2	9517	B2	9717	B2
2546	B2	9518	C1	9721	B2
2565	B3	9519	B1	9723	B1
2589	B2	9520	B1	9725	C2
2590	B3	9521	B1	9729	B2
2591	B3	9522	B1	9730	C2
2592	C3	9523	C1	9733	C1
2593	B3	9524	C1	9741	C2
2594	C2	9527	C1	9742	C2
2603	C3	9528	C1	9743	B2
2604	C4	9529	B1	9746	C3
2611	C4	9530	C2	9748	C1
2612	C4	9544	A2	9750	C4
2621	B2	9546	B3	9753	C2
2625	C4	9547	A2	9755	C2
2626	B4	9548	B2	9756	C2
2661	A1	9550	A3	9762	A5
2662	A1	9551	A2	9764	B3
2681	B4	9552	C1	9765	A4
2696	B1	9554	A1	9766	A4
2803	C1	9555	A1	9768	C2
2820	A4	9557	A2	9769	C3
2901	B5	9559	A2	9771	C3
2923	B5	9564	A3	9772	A5
2926	A5	9566	A3	9773	A5
2935	C2	9568	A3	9904	B5
2940	B4	9570	A2	9907	A2
2941	C4	9573	A3	9908	B4
2942	C3	9575	A3	9909	A4
2956	A4	9576	A4		
3205	B5	9577	A1		
3403	B4	9578	A3		
3410	A3	9579	A5		
3412	A3	9581	A4		
3435	C4	9582	A4		
3436	C5	9583	A1		
3437	C4	9584	A3		
3438	C5	9586	A3		

AF12 BOARD - CHIP LAYOUT (MAPPING)

2205	A3	2928	C4	3641	C3	4130	B2	7604	C2
2206	B4	2929	C4	3642	C3	4133	B1	7621	B2
2208	A2	2930	C4	3644	A1	4137	C1	7622	B2
2212	B5	2933	C3	3645	B3	4138	C2	7623	B2
2213	B5	2934	C3	3646	C3	4139	B1	7635	A4
2215	B2	2936	C4	3651	A4	4141	B1	7636	B3
2216	B3	2937	C4	3652	A4	4142	A3	7651	A4
2401	B1	2938	C4	3653	A4	4145	A1	7652	A4
2402	B1	2939	C4	3654	A4	4146	A4	7653	A4
2403	B1	2950	A1	3655	A4	4148	A4	7654	A4
2404	B2	2951	A1	3656	A4	4149	B5	7661	A5
2501	A5	2952	A2	3657	A4	4150	C5	7662	A5
2502	A5	2953	A2	3658	A4	4151	A2	7663	A5
2505	C4	2954	A4	3659	C2	4152	A2	7681	B2
2506	C4	2955	B1	3660	C2	4153	B1	7682	B2
2507	C5	3201	A4	3661	A5	4202	B5	7693	B5
2513	B3	3202	A3	3662	A5	4203	A4	7694	C4
2514	B3	3203	B2	3664	A5	4206	B5	7695	C3
2515	B4	3204	B2	3665	A5	4207	A4	7802	C5
2516	B4	3206	B2	3666	A5	4208	A4	7803	A4
2521	A5	3207	B2	3667	A5	4209	A5		
2522	A4	3208	C4	3668	A5	4210	B5		
2523	B4	3401	B1	3669	A5	4211	A4		
2524	C4	3402	B1	3683	B2	4212	B5		
2533	B4	3406	B2	3684	B2	4301	A2		
2534	C4	3408	B3	3686	B2	4305	B3		
2543	B4	3409	B3	3687	B2	4319	C4		
2544	C4	3501	A5	3688	B2	4331	C4		
2547	B4	3502	A5	3689	B2	4332	C2		
2548	B4	3503	A5	3690	B5	4334	B1		
2567	B4	3504	A5	3692	B2	4336	B3		
2568	C4	3505	A5	3694	B2	4337	B4		
2581	C3	3506	A5	3699	B5	4338	B4		
2582	C2	3507	A5	3700	B5	4342	B2		
2583	C3	3508	A5	3711	B3	4403	B2		
2584	C2	3511	B3	3712	A5	4404	A2		
2585	C2	3512	B3	3721	A4	4405	A4		
2586	C2	3513	B3	3723	A5	4407	B3		
2587	B3	3514	B3	3724	B5	4408	B5		
2588	C2	3521	A5	3725	B5	4409	B3		
2601	C3	3522	A5	3726	A4	4410	B3		
2602	C3	3523	A5	3727	B5	4411	B3		
2605	C2	3524	A5	3728	A5	4501	B5		
2606	C2	3525	B4	3729	B5	4641	C3		
2607	B2	3526	B4	3730	A5	4642	C3		
2608	C2	3531	C1	3731	A3	4660	A4		
2609	B2	3532	C2	3732	B1	4661	A4		
2610	C2	3533	C2	3733	A3	4662	A4		
2620	B2	3534	C1	3734	A4	4663	A1		
2622	B2	3543	B4	3735	C4	4801	C5		
2624	C3	3544	B4	3736	C4	4802	A1		
2641	C3	3545	B4	3737	C4	4811	B2		
2642	C3	3546	C4	3801	C5	4812	C2		
2653	A4	3547	B4	3802	C5	4813	B5		
2654	A4	3548	C4	3803	C5	4814	A5		
2663	A5	3549	B4	3805	C5	4903	A1		
2664	A5	3550	C4	3806	B5	4904	B1		
2665	A5	3582	C2	3807	C5	4905	A3		
2666	A5	3591	B3	3808	C5	4906	A5		
2667	A5	3592	C3	3809	C5	4907	A1		
2669	A5	3593	B3	3810	A1	4908	A1		
2682	B2	3594	C4	3932	C4	4909	C5		
2683	B2	3607	B2	3933	C4	4910	B5		
2691	A4	3609	B2	3935	C4	4911	B5		
2697	B5	3610	C2	3936	C4	4912	B1		
2698	B5	3611	C2	3937	C4	4913	B1		
2707	B3	3612	C2	3938	C4	4914	A2		
2708	B3	3613	C2	3939	C4	4915	A1		
2801	C5	3614	C2	3940	C4	4920	B5		
2802	C5	3615	C2	3941	C4	4921	C5		
2804	C5	3616	C2	3942	C4	4922	A4		
2805	C5	3621	B2	3943	C4	4923	A4		
2806	C5	3622	B2	3944	C3	4924	A4		
2807	C5	3623	B2	3945	C3	4925	B2		
2808	C5	3624	B2	3946	C3	4926	A3		
2809	C5	3625	B2	3947	C3	4927	C4		
2810	C5	3626	B2	3948	C3	5907	A1		
2902	C1	3629	C2	3949	C4	5915	A1		
2904	A5	3630	A1	3950	C3	7201	A4		
2905	C2	3633	A4	3951	C3	7203	B3		
2908	A3	3634	A4	3952	C3	7204	B2		
2921	B5	3635	B2	3953	B4	7402	B3		
2922	B1	3636	A4	3954	C4	7403	B1		
2924	B5	3637	B3	4101	B5	7501	B3		
2925	A5	3638	A4	4102	A3	7601	C2		
2927	C4	3639	A4	4104	A5	7603	B2		

AF12 BOARD - CHIP LAYOUT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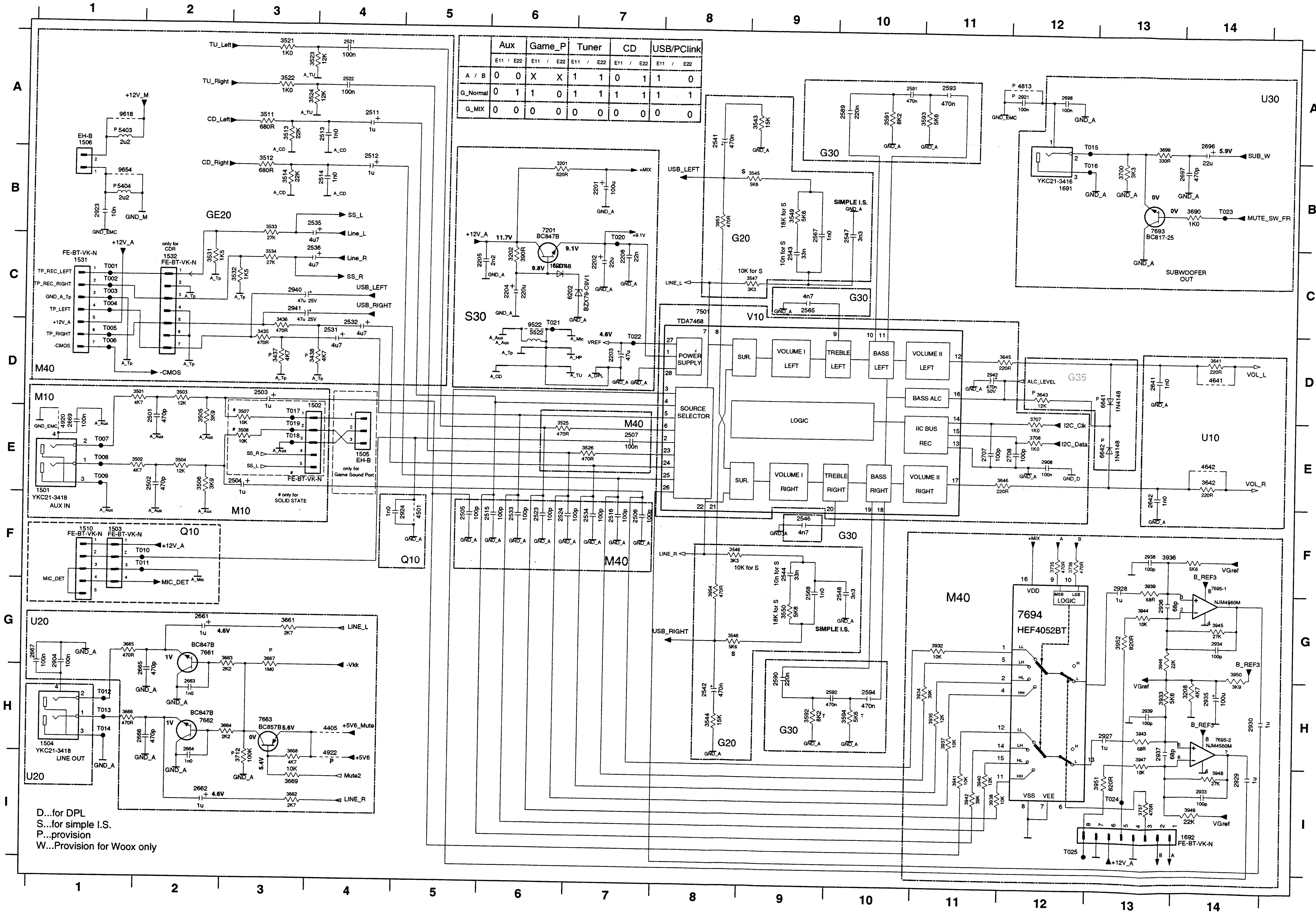
AF12 BOARD - CIRCUIT DIAGRAM (PART 1)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U20
S30
G20
G30
V10
U30
U10
G35
TDA7468
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SOURCE SELECTOR
SUR.
VOLUME I LEFT
TREBLE LEFT
BASS LEFT
VOLUME II LEFT
BASS ALC
LOGIC
IIC BUS
REC
VOLUME I RIGHT
TREBLE RIGHT
BASS RIGHT
VOLUME II RIGHT
7694
HEF4052BT
NJM4560M
SUBWOOFER OUT
SIMPLE I.S.
TU_Left
TU_Right
CD_Left
CD_Right
USB_LEFT
USB_RIGHT
LINE_L
LINE_R
VOL_L
VOL_R
SUB_W
MUTE_SW_FR
I2C_Clk
I2C_Data
ALC_LEVEL
MIC_DET
-CMOS
YKC21-3418 AUX IN
YKC21-3418 LINE OUT
YKC21-3416 1691
FE-BT-VK-N
EH-B
only for Game Sound Port
# only for SOLID STATE
1505 EH-B
BC847B
BC857B
BC817-25
BZX79-C9V1
1N4148
+12V_M
+12V_A
+5V6
+5V6_Mute
Mute2
-Vkk
VGref
B_REF3
+MIX
GND_A
GND_EMC
GND_M
A_Aux
A_Tp
A_CD
A_TU
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

	Aux		Game_P		Tuner		CD		USB/PClink	
	E11 /	E22	E11 /	E22	E11 /	E22	E11 /	E22	E11 /	E22
A / B	0	0	X	X	1	1	0	1	1	0
G_Normal	0	1	1	0	1	1	1	1	1	1
G_MIX	0	0	0	0	0	0	0	0	0	0

D...for DPL
S...for simple I.S.
P...provision
W...Provision for Woox only

1501	E1
1502	D3
1503	F1
1504	H1
1505	E4
1506	A1
1510	F1
1531	C1
1532	C2
1691	B12
1692	I14
2201	B7
2202	C7
2203	D7
2204	C6
2205	C5
2206	C7
2501	E2
2502	E2
2503	D3
2504	E3
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2506	F7
2507	E7
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2512	B4
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2514	B4
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2642	E13
2661	G2
2662	I2
2663	H2
2664	H2
2665	H2
2666	H2
2667	G1
2669	E1
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2698	A12
2707	E11
2708	E12
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2908	E12
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2928	F13
2929	I14
2930	H14
2933	I14
2934	G14
2935	H14
2936	G13
2937	H13
2938	F13
2939	H13
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3508	E3
3511	A3
3512	B3
3513	A3
3514	B3
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3543	A9
3544	H8
3545	B9
3546	G8
3547	C9
3548	F8
3549	B9
3550	G9
3591	A10
3592	H9
3593	A11
3594	H10
3641	D14
3642	E14
3643	D12
3645	D11
3646	E11
3661	G3
3662	I3
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3937	H11
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3939	F13
3940	I11
3941	I11
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3947	H13
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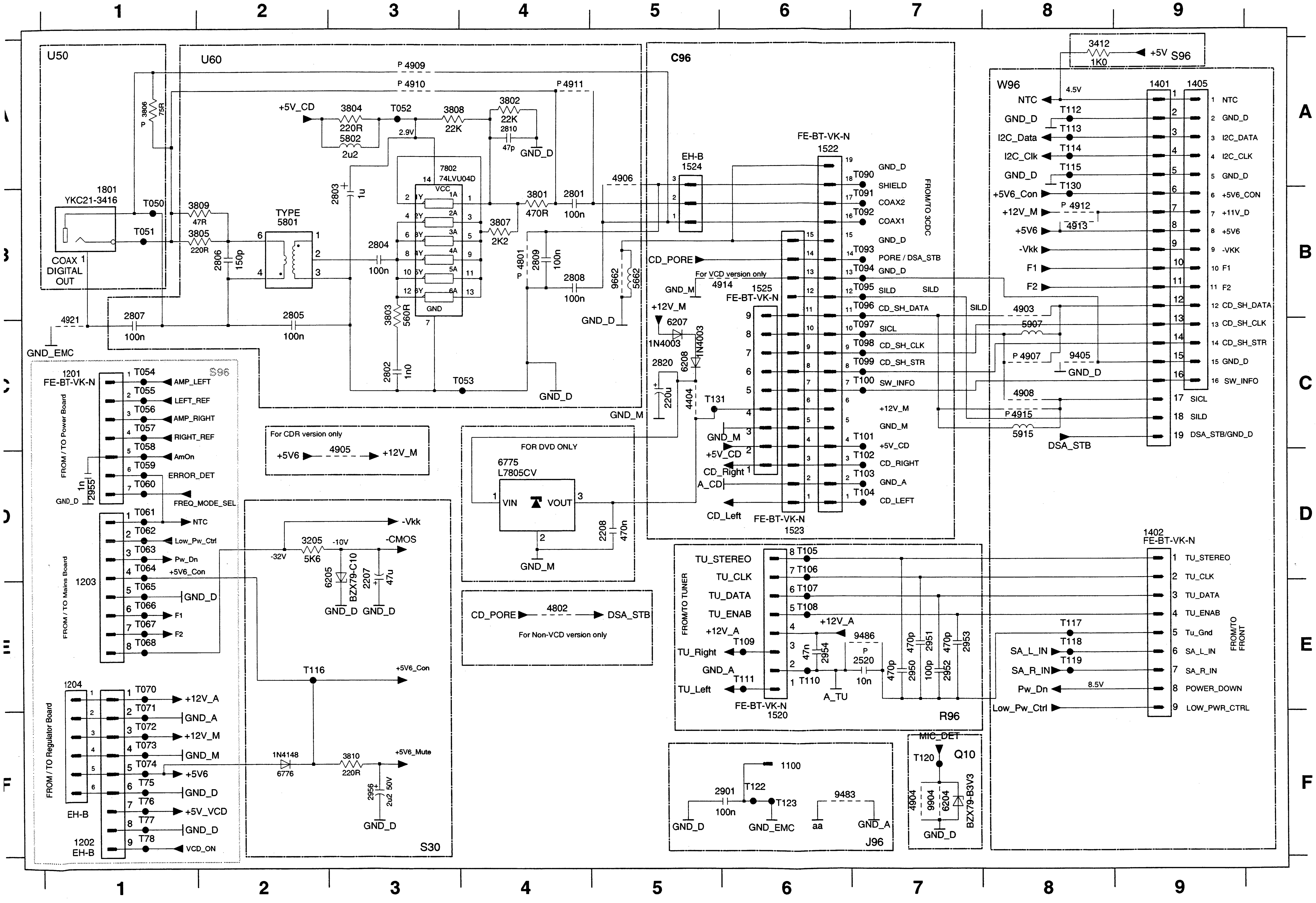
3949	I14
3950	G14
3951	I13
3952	G13
3953	B8
3954	G8
4501	F5
4641	D14
4642	E14
4813	A12
4920	E1
4922	I4
4925	H4
5403	A1
5404	B1
5522	D6
6201	C6
6202	C6
6641	D13
6642	E13
7201	B6
7501	C8
7661	G2
7662	H2
7663	H3
7693	B13
7694	G12
7695-1	F14
7695-2	H14
9522	D6
9618	A1
9654	B1
T001	C1
T002	C1
T003	C1
T004	C1
T005	D1
T006	D1
T007	E1
T008	E1
T009	E1
T010	F2
T011	F2
T012	H1
T013	H1
T014	H1
T015	A12
T016	B12
T017	E3
T018	E3
T019	E3
T020	B7
T021	C6
T022	D7
T023	B14
T024	I13
T025	I12

F12 BOARD - CIRCUIT DIAGRAM (PART 2)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D
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U60
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S96
S30
J96
R96
1801
YKC21-3416
COAX
DIGITAL
OUT
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T051
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75R
3809
47R
3805
220R
2806
150p
TYPE
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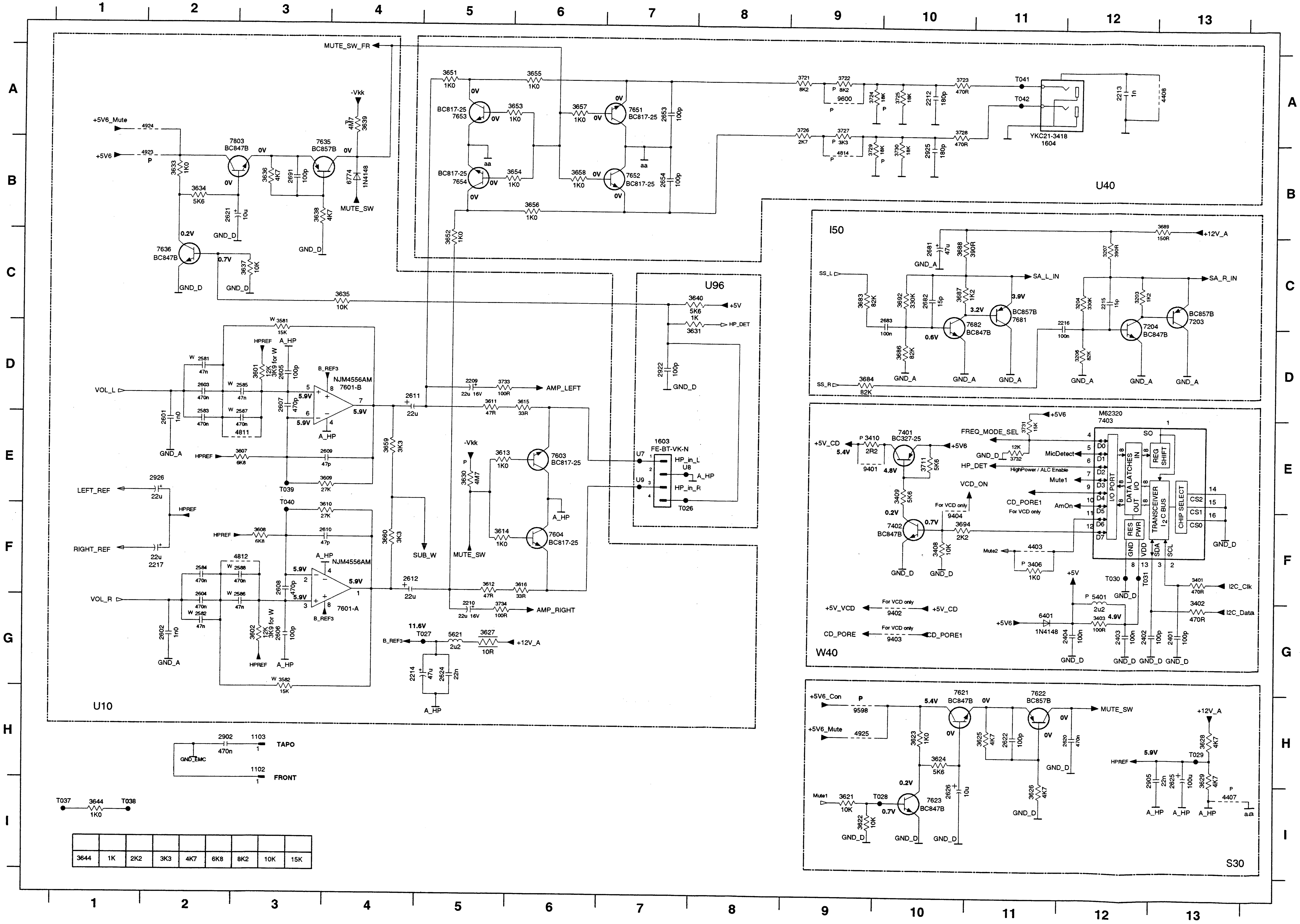
2807
100n
2805
100n
GND_EMC
P 4909
P 4910
P 4911
+5V_CD
3804
220R
5802
2u2
T052
2.9V
3808
22K
3802
22K
2810
47p
GND_D
7802
74LVU04D
VCC
GND
2803
1u
2804
100n
3803
560R
2802
1n0
T053
3807
2K2
3801
470R
2801
100n
4801
2809
100n
2808
100n
4906
9662
5662
EH-B
1524
FE-BT-VK-N
1522
FROM/TO 3CDC
GND_D
SHIELD
COAX2
COAX1
PORE / DSA_STB
SILD
CD_SH_DATA
SICL
CD_SH_CLK
CD_SH_STR
SW_INFO
+12V_M
GND_M
+5V_CD
CD_RIGHT
GND_A
CD_LEFT
T090
T091
T092
T093
T094
T095
T096
T097
T098
T099
T100
T101
T102
T103
T104
CD_PORE
For VCD version only
4914
1525
FE-BT-VK-N
1523
+12V_M
6207
1N4003
6208
1N4003
2820
220u
4404
T131
GND_M
+5V_CD
CD_Right
A_CD
CD_Left
4.5V
NTC
GND_D
I2C_Data
I2C_Clk
+5V6_Con
+12V_M
+5V6
-Vkk
F1
F2
T112
T113
T114
T115
T130
P 4912
4913
4903
5907
P 4907
9405
4908
P 4915
5915
DSA_STB
3412
1K0
+5V
1401
1405
NTC
GND_D
I2C_DATA
I2C_CLK
+5V6_CON
+11V_D
+5V6
-VKK
F1
F2
CD_SH_DATA
CD_SH_CLK
CD_SH_STR
GND_D
SW_INFO
SICL
SILD
DSA_STB/GND_D
1201
FE-BT-VK-N
FROM / TO Power Board
T054
T055
T056
T057
T058
T059
T060
AMP_LEFT
LEFT_REF
AMP_RIGHT
RIGHT_REF
AmOn
ERROR_DET
FREQ_MODE_SEL
1n
2955
1203
FROM / TO Mains Board
T061
T062
T063
T064
T065
T066
T067
T068
NTC
Low_Pw_Ctrl
Pw_Dn
+5V6_Con
GND_D
F1
F2
1204
FROM / TO Regulator Board
EH-B
1202
T070
T071
T072
T073
T074
T75
T76
T77
T78
+12V_A
GND_A
+12V_M
GND_M
+5V6
GND_D
+5V_VCD
GND_D
VCD_ON
For CDR version only
+5V6
4905
+12V_M
-Vkk
3205
5K6
-10V
-32V
-CMOS
6205
BZX79-C10
2207
47u
T116
+5V6_Con
1N4148
6776
3810
220R
+5V6_Mute
2956
2u2 50V
FOR DVD ONLY
6775
L7805CV
VIN
VOUT
2208
470n
CD_PORE
4802
DSA_STB
For Non-VCD version only
FROM/TO TUNER
TU_STEREO
TU_CLK
TU_DATA
TU_ENAB
+12V_A
TU_Right
GND_A
TU_Left
T105
T106
T107
T108
T109
T110
T111
9486
P
2520
10n
47n
2954
470p
2951
2950
100p
2952
2953
A_TU
FE-BT-VK-N
1520
1402
FE-BT-VK-N
FROM/TO FRONT
TU_STEREO
TU_CLK
TU_DATA
TU_ENAB
Tu_Gnd
SA_L_IN
SA_R_IN
POWER_DOWN
LOW_PWR_CTRL
T117
T118
T119
SA_L_IN
SA_R_IN
Pw_Dn
8.5V
Low_Pw_Ctrl
1100
2901
100n
T122
T123
GND_EMC
9483
aa
GND_A
MIC_DET
T120
Q10
4904
9904
6204
BZX79-B3V3

T75	F1
T76	F1
T77	F1
T78	F1
1100	F6
1201	C1
1202	F1
1203	E1
1204	E1
1401	A9
1402	D9
1405	A9
1520	F6
1522	A6
1523	D6
1524	A5
1525	B6
1801	B1
2207	D3
2208	D5
2520	E7
2801	B4
2802	C3
2803	B3
2804	B3
2805	B2
2806	B2
2807	B1
2808	B4
2809	B4
2810	A4
2820	C5
2901	F6
2950	E7
2951	E7
2952	E7
2953	E7
2954	E6
2955	D1
2956	F3
3205	D2
3412	A8
3801	B4
3802	A4
3803	B3
3804	A3
3805	B2
3806	A1
3807	B4
3808	A3
3809	B2
3810	F3
4404	C5
4801	B4
4802	E4
4903	B8
4904	F7
4905	D3
4906	A5
4907	C8
4908	C8
4909	A3
4910	A3
4911	A4
4912	B8
4913	B8
4914	B6
4915	C8
4921	C1
5662	B5
5801	B2
5802	A3
5907	C8
5915	C8
6204	F7
6205	D3
6207	B5
6208	C5
6775	D4
6776	F2
7802	A3
9405	C8
9483	F6
9486	E7
9662	B5
9904	F7
T050	B1
T051	B1
T052	A3
T053	C4
T054	C1
T055	C1
T056	C1
T057	C1
T058	C1
T059	D1
T060	D1
T061	D1
T062	D1
T063	D1
T064	D1
T065	E1
T066	E1
T067	E1
T068	E1
T070	E1
T071	E1
T072	F1
T073	F1
T074	F1
T090	A7
T091	B7
T092	B7
T093	B7
T094	B7
T095	B7
T096	B7
T097	C7
T098	C7
T099	C7
T100	C7
T101	C7
T102	D7
T103	D7
T104	D7
T105	D6
T106	D6
T107	E6
T108	E6
T109	E6
T110	E6
T111	E6
T112	A8
T113	A8
T114	A8
T115	A8
T116	E2
T117	E8
T118	E8
T119	E8
T120	F7
T122	F6
T123	F6
T130	B8
T131	C5

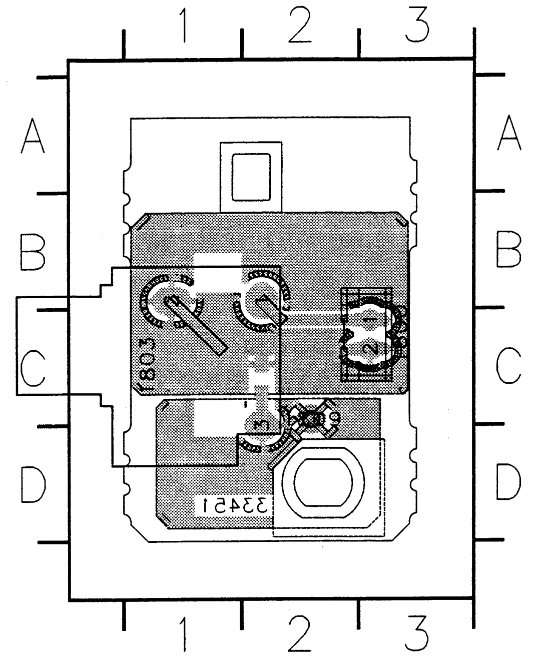
AF12 BOARD - CIRCUIT DIAGRAM (PART 3)


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
MUTE_SW_FR
+5V6_Mute
4924
+5V6
4923
7803
BC847B
7635
BC857B
-Vkk
3639
4M7
6774
1N4148
MUTE_SW
3633
1K0
3634
5K6
3636
4K7
2691
100p
3638
4K7
2621
10u
GND_D
7636
BC847B
0.2V
0.7V
3637
10K
3635
10K
3651
1K0
3655
1K0
BC817-25
7653
3653
1K0
3657
1K0
7651
BC817-25
2653
100p
BC817-25
7654
3654
1K0
3658
1K0
7652
BC817-25
2654
100p
3656
1K0
3652
1K0
aa
0V
3721
8K2
3722
8K2
9600
3724
18K
3725
18K
2212
180p
3723
470R
T041
T042
YKC21-3418
1604
2213
1n
4408
3726
2K7
3727
3K3
4814
3729
18K
3730
18K
2925
180p
3728
470R
U40
U96
3640
5K6
+5V
1K
3631
HP_DET
2922
100p
GND_D
I50
SS_L
SS_R
2681
47u
3688
390R
3689
150R
+12V_A
3207
390R
GND_A
SA_L_IN
SA_R_IN
3683
82K
3692
330K
2682
15p
3687
1K2
3.9V
BC857B
7681
3.2V
2683
100n
7682
BC847B
0.6V
3686
82K
3684
82K
3204
330K
2215
15p
3203
1K2
BC857B
7203
2216
100n
7204
BC847B
3206
82K
W 3581
15K
HPREF
A_HP
W 2581
47n
3601
12K
3K9 for W
2605
100p
B_REF3
NJM4556AM
7601-B
2603
470n
W 2585
47n
VOL_L
2601
1n0
2583
470n
W 2587
470n
4811
2607
470p
5.9V
GND_A
3607
6K8
2609
47p
T039
3609
27K
T040
2926
22u
LEFT_REF
RIGHT_REF
2217
22u
3610
27K
3608
6K8
2610
47p
4812
2584
470n
W 2588
470n
NJM4556AM
7601-A
VOL_R
2604
470n
W 2586
47n
W 2582
47n
2608
470p
2602
1n0
3602
12K
3K9 for W
2606
100p
W 3582
15K
U10
2611
22u
2209
22u 16V
3733
100R
AMP_LEFT
3611
47R
3615
33R
3659
3K3
3660
3K3
SUB_W
-Vkk
3613
1K0
7603
BC817-25
3630
4M7
3614
1K0
7604
BC817-25
MUTE_SW
1603
FE-BT-VK-N
U7
U8
U9
HP_in_L
HP_in_R
T026
2612
22u
3612
47R
3616
33R
2210
22u 16V
3734
100R
AMP_RIGHT
11.6V
T027
B_REF3
5621
2u2
3627
10R
+12V_A
2214
47u
2624
22n
2902
470n
1103
TAPO
GND_EMC
1102
FRONT
T037
3644
1K0
T038
3644
1K
2K2
3K3
4K7
6K8
8K2
10K
15K
M62320
7403
3731
15K
+5V6
FREQ_MODE_SEL
P 3410
2R2
7401
BC327-25
+5V_CD
5.4V
9401
4.8V
3711
5K6
GND_D
3732
12K
HP_DET
MicDetect
HighPower / ALC Enable
Mute1
VCD_ON
CD_PORE1
AmOn
For VCD only
9404
3409
5K6
7402
BC847B
0.7V
3694
2K2
3408
10K
Mute2
4403
3406
1K0
D0
D1
D2
D3
D4
D5
D6
D7
I/O PORT
DATA LATCHES
OUT I/O
IN
SHIFT
RES
PWR
TRANSCEIVER
I2C BUS
CHIP SELECT
CS2
CS1
CS0
GND
VDD
SDA
SCL
SO
T030
T031
3401
470R
I2C_Clk
3402
470R
I2C_Data
+5V_VCD
9402
+5V_CD
CD_PORE
9403
CD_PORE1
+5V6
6401
1N4148
P 5401
2u2
3403
100R
4.9V
2404
100n
2403
100n
2402
100n
2401
100p
W40
+5V6_Con
9598
+5V6_Mute
4925
5.4V
7621
BC847B
7622
BC857B
MUTE_SW
3623
1K0
3625
4K7
2622
100p
2620
470n
3624
5K6
2626
10u
3626
4K7
Mute1
3621
10K
T028
3622
10K
7623
BC847B
0.2V
+12V_A
3628
4K7
5.9V
T029
HPREF
2905
22n
2625
100u
3629
4K7
4407
A_HP
S30

U7	E7
U8	E7
U9	E7
1102	H3
1103	H3
1603	E7
1604	A11
2209	D5
2210	G5
2212	A10
2213	A12
2214	G4
2215	C12
2216	C12
2217	F2
2401	G13
2402	G12
2403	G12
2404	G12
2581	D2
2582	G2
2583	E2
2584	F2
2585	D3
2586	G3
2587	E3
2588	F3
2601	E2
2602	G2
2603	D2
2604	G2
2605	D3
2606	G3
2607	D3
2608	F3
2609	E4
2610	F4
2611	D4
2612	F4
2620	H12
2621	B2
2622	H11
2624	G5
2625	H13
2626	I10
2653	A7
2654	B7
2681	C10
2682	C10
2683	C10
2691	B3
2902	H2
2905	H13
2922	D7
2925	B10
2926	E2
3203	C12
3204	C12
3206	D12
3207	C12
3401	F13
3402	F13
3403	G12
3406	F11
3408	F10
3409	E10
3410	E9
3581	D3
3582	G3
3601	D3
3602	G3
3607	E3
3608	F3
3609	E4
3610	F4
3611	D5
3612	F5
3613	E5
3614	F5
3615	D6
3616	F6
3621	I9
3622	I9
3623	H10
3624	H10
3625	H11
3626	I11
3627	G5
3628	H13
3629	H13
3630	E5
3631	D8
3633	B2
3634	B2
3635	C4
3636	B3
3637	C3
3638	B3
3639	A4
3640	C8
3644	I1
3651	A5
3652	C5
3653	A6
3654	B6
3655	A6
3656	B6
3657	A6
3658	B6
3659	E4
3660	F4
3683	C9
3684	D9
3686	D10
3687	C10
3688	C10
3689	B13
3692	C10
3694	F10
3711	E10
3721	A9
3722	A9
3723	A10
3724	A9
3725	A10
3726	A9
3727	A9
3728	A10
3729	B9
3730	B10
3731	E11
3732	E11
3733	D5
3734	G5
4403	F11
4407	I13
4408	A13
4811	E3
4812	F3
4814	B9
4923	B2
4924	A2
4925	H9
5401	F12
5621	G5
6401	G11
6774	B4
7203	C13
7204	C12
7401	E10
7402	F10
7403	D12
7601-A	G4
7601-B	D4
7603	E6
7604	F6
7621	H10
7622	G11
7623	I10
7635	B3
7636	C2
7651	A7
7652	B7
7653	A5
7654	B5
7681	C11
7682	C10
7803	B3
9401	E9
9402	G10
9403	G10
9404	F10
9598	H9
9600	A9
T026	F7
T027	G5
T028	I10
T029	H13
T030	F12
T031	F12
T037	I1
T038	I1
T039	E3
T040	F3
T041	A11
T042	A11

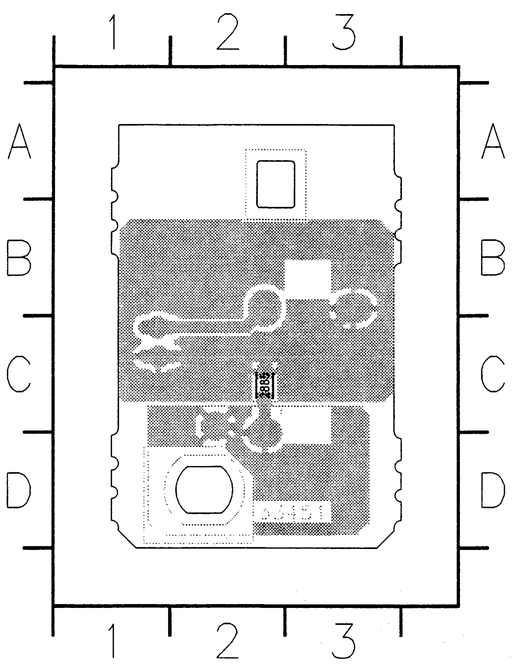
IDEO OUT CINCH BOARD - OMPONENT LAYOUT

1800 C3 1803 C1 1809 C2



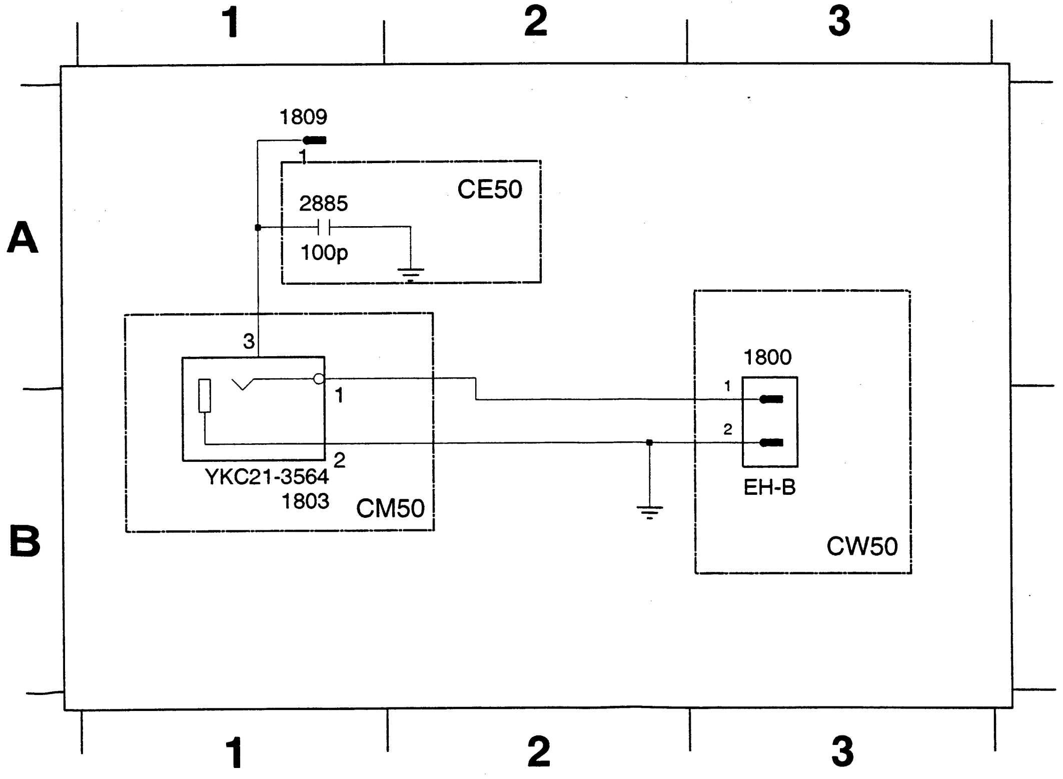
VIDEO OUT CINCH BOARD - CHIP LAYOUT

2885 C2



IDEO OUT CINCH BOARD - CIRCUIT DIAGRAM

1800 A3 1803 B1 1809 A1 2885 A1

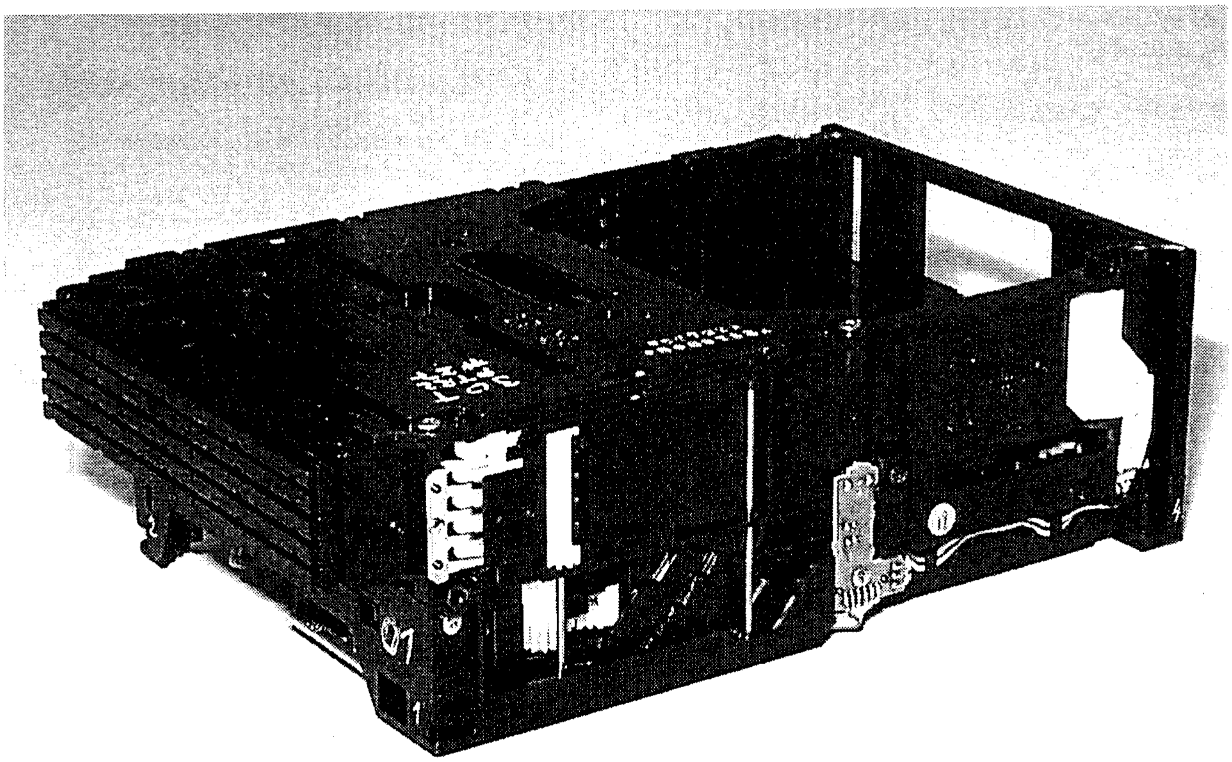


ELECTRICAL PARTSLIST - AF12 BOARD

- IC & TRANSISTORS -

7201	5322 130 60159	BC846B
7204	5322 130 60159	BC846B
7402	5322 130 60159	BC846B
7621	5322 130 60159	BC846B
7623	5322 130 60159	BC846B
7636	5322 130 60159	BC846B
7682	5322 130 60159	BC846B
7803	5322 130 60159	BC846B
7203	4822 130 60373	BC856B
7622	4822 130 60373	BC856B
7635	4822 130 60373	BC856B
7681	4822 130 60373	BC856B
7603	4822 130 42804	BC817-25
7604	4822 130 42804	BC817-25
7401	4822 130 41246	BC327-25
7601	4822 209 31378	NJM4556MB
7403	4822 209 17345	M62320FP
7501	9322 150 74668	IC SM TDA7468D
7694	5322 209 11102	HEF4052BT
7695	4822 209 83357	NJM4560M

Note: **Only these parts mentioned in the list are normal service parts.**



5DTC Module

(MP3 version)

Layout stage .4

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Control Board
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Exploded view loader 10-16
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n case of symptom „skipping tracks“ perform ollowing actions:

1. VERIFY THE COMPLAINT

PLAYABILITY CHECK

Use CDDA SBC 444A: 4822 397 30245
TR 14 (600µ black dot) maximum at 01:15
TR 19 (fingerprint)
TR 10 (1000µ wedge)

Use CD-RW Printed Audio Disk 7104 099 96611
TR 3 (Fingerprint)
TR 8 (600µ black dot) maximum at 01:00

- playback of all these tracks without audible disturbance
- jump forward/backward within a reasonable time

2. CLEAN THE LENS

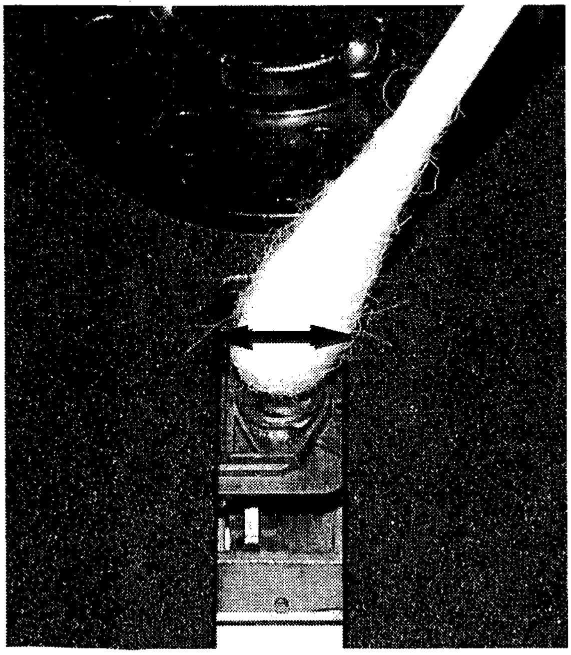
CD DRIVE – LENS CLEANING

Before touching the lens it is advised to clean the surface of the lens by blowing clean air over it in order to avoid that little particles make scratches on the lens.

Because the material of the lens is synthetic and coated with a special anti-reflectivity layer, cleaning must be done with a non-aggressive cleaning fluid. It is advised to use "KODAK LENS CLEANER CAT 176 71 36", available in normal photo shops.

The actuator is a very precise mechanical component and may not be damaged in order to guarantee its full function. It is advised to clean the lens gently (don't press too hard) with a soft and clean cotton bud moistened with the special lens cleaner.

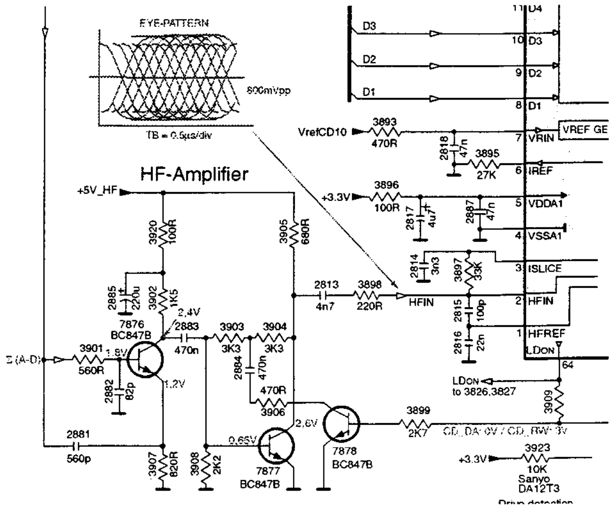
The direction of cleaning must be in the way as indicated in the picture below.



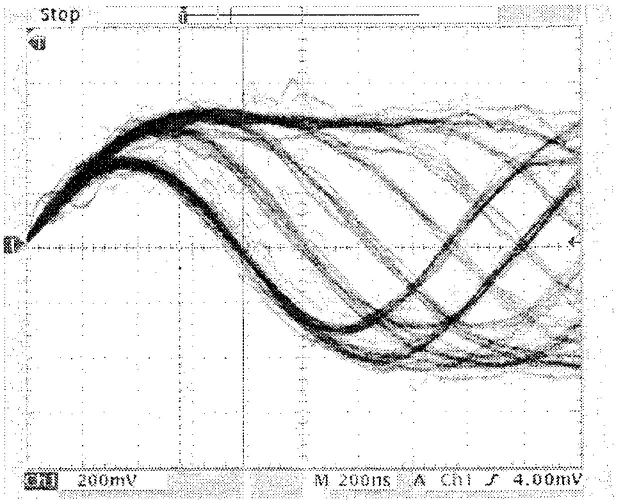
3. MEASURE THE EYE-PATTERN SIGNAL

EYE-PATTERN SIGNAL – JITTER MEASUREMENT

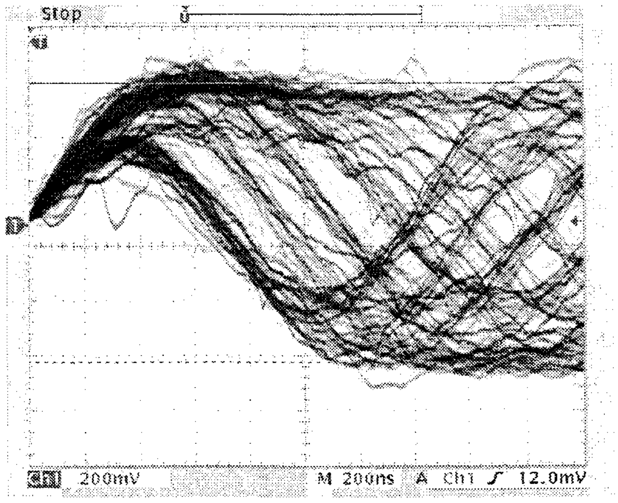
Measure the signal direct on resistor 3898 using an oscilloscope (see also chapter 10-9).


EYE-PATTERN
800mVpp
TB = 0.5µs/div
HF-Amplifier
+5V_HF
3920 100R
3905 680R
2885 220µ
3902 1K5
2.4V
7876 BC847B
2883 470n
3903 3K3
3904 3K3
3901 560R
1.8V
1.2V
2882 82p
2884 470n
470R
3906
2881 560p
3907 820R
3908 2K2
0.65V
7877 BC847B
2.6V
7878 BC847B
VrefCD10
3893 470R
2818 47n
3895 27K
+3.3V
3896 100R
2817 4µ7
2887 47n
2814 3n3
3897 33K
2813 4n7
3898 220R
HFIN
2815 100p
2816 22n
LDON
to 3826,3827
3899 2K7
3909
3923 10K
Sanyo DA12T3
D1
D2
D3
D4
1 HFREF
2 HFIN
3 ISLICE
4 VSSA1
5 VDDA1
6 IREF
7 VRIN
8 D1
9 D2
10 D3
11 D4
VREF GE
LDON
64

See below examples of the signal. Amplitude should read at least 700mVpp using SBC444A.



good



bad

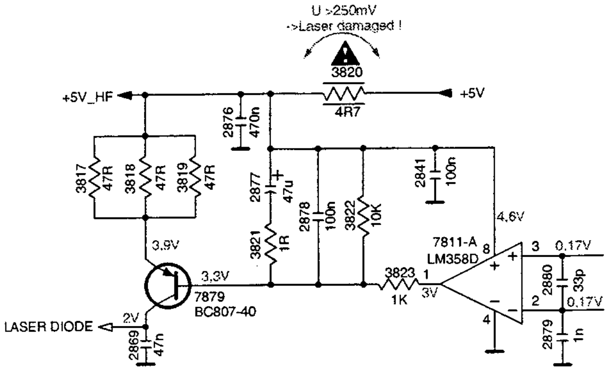
If the oscilloscope shows a signal like the 'bad' one, and/or the amplitude decreases within 1minute - the CD drive has to be replaced.

4. *MEASURE THE LASER CURRENT*

CD DRIVE – LASER CURRENT MEASUREMENT

The laser current can be measured as a voltage drop on resistor 3820. Typical value 170 - 190mV for CD-DA respectively 200 - 220mV for CD-RW.

Laser power control


U >250mV
->Laser damaged !
3820
4R7
+5V_HF
+5V
2876
470n
3817
47R
3818
47R
3819
47R
2877
47u
2878
100n
3822
10K
2841
100n
3821
1R
4,6V
3,9V
3,3V
7879
BC807-40
7811-A
LM358D
3823
1K
3V
8
3
0,17V
2880
33p
1
2
0,17V
4
2879
1n
LASER DIODE
2V
2869
47n

5. *MEASURE THE OFFSETS OF THE CD-DRIVE*

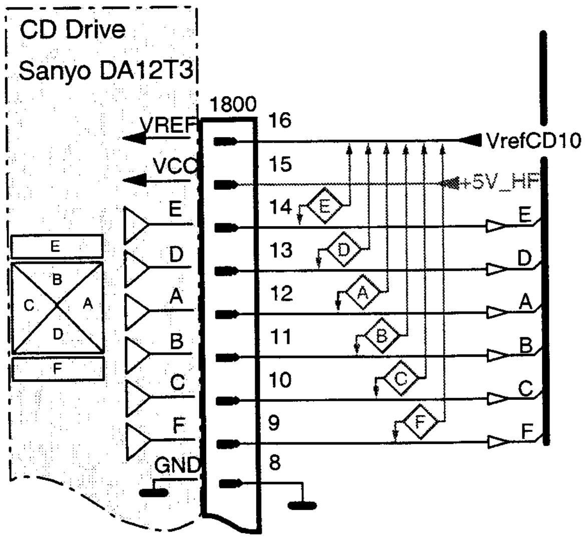
CD DRIVE – OFFSET MEASUREMENT

Each photodiode of the CD-drive may have an offset. This offset has to be compensated by the signal processor. A high offset of the CD-drive leads to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ without a CD. Focus sensitivity = CD-RW.

Use a DC Millivoltmeter for measurement. The offsets can be measured direct on the connector. See drawing below.

The values from diode A-D should read 0±10mV. Diodes E and F are less critical.


CD Drive
Sanyo DA12T3
1800
VREF
VCC
E
D
A
B
C
F
GND
16
15
14
13
12
11
10
9
8
VrefCD10
+5V_HF
E
D
A
B
C
F

If one of the offsets is higher than ±10mV the CD drive has to be replaced.

6. *MEASURE THE OFFSETS OF THE CD10*

SIGNAL PROCESSOR – OFFSET MEASUREMENT

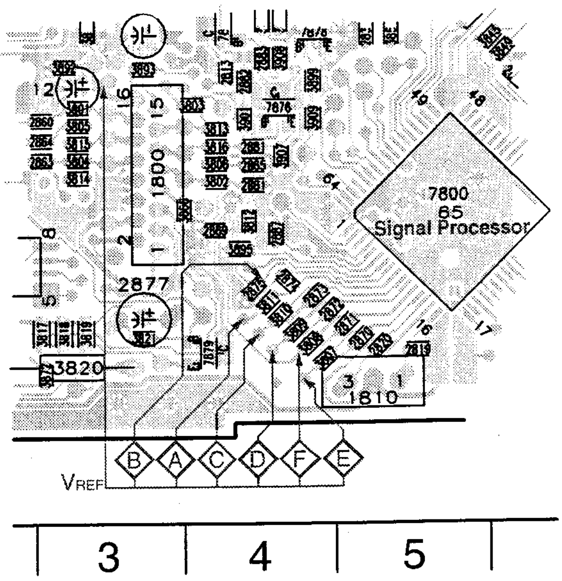
Each ADC input of the CD10 may have an offset too. Also this offset leads (together with the offsets of the CD Drive) to poor playability of some CDs (skipping tracks).

Start the **Service Test Program** - section „Focus Test“ using a CD-RW disc.

Use a DC Millivoltmeter for measurement. The offsets can be measured on capacitors near the signal processor. See drawing below.

The value should read 0mV±10mV.

CD Board side A view


1800
7800
65
Signal Processor
2877
3820
1810
VREF
B
A
C
D
F
E
3
4
5

If one of the offsets is higher than ±10mV the signal processor has to be replaced.

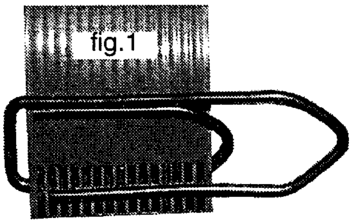
If none of the measured offsets is higher than ±10mV - replace the part with the higher value.

VARNING

CHARGED CAPACITORS ON THE SERVO BOARD MAY DAMAGE THE CD DRIVE ELECTRONICS WHEN CONNECTING A NEW CDM MECHANISM. THAT´S WHY, BESIDES THE SAFETY MEASURES LIKE
- ***SWITCH OFF POWER SUPPLY***
- ***ESD PROTECTION***

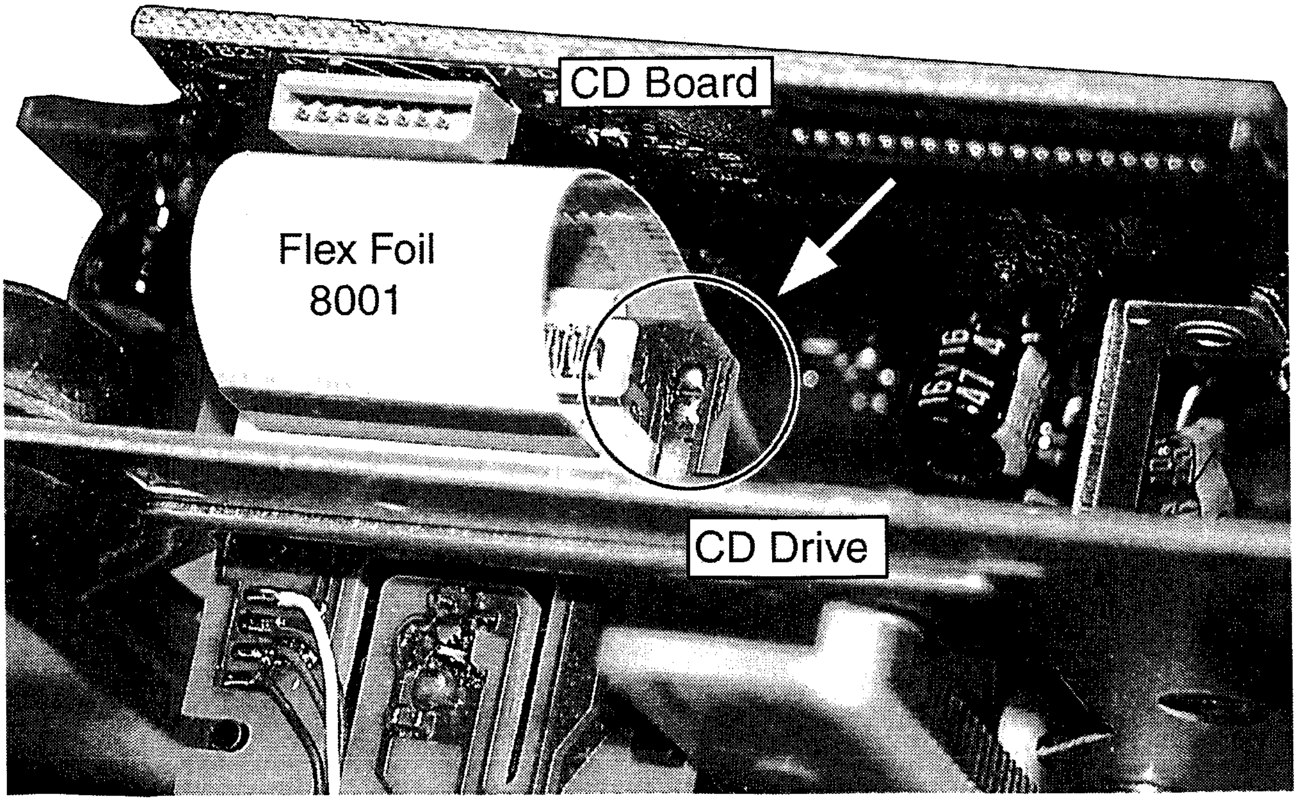
ADDITIONAL ACTIONS MUST BE TAKEN BY THE REPAIR TECHNICIAN.

he CD drive forms a compact building block with the CD Board.

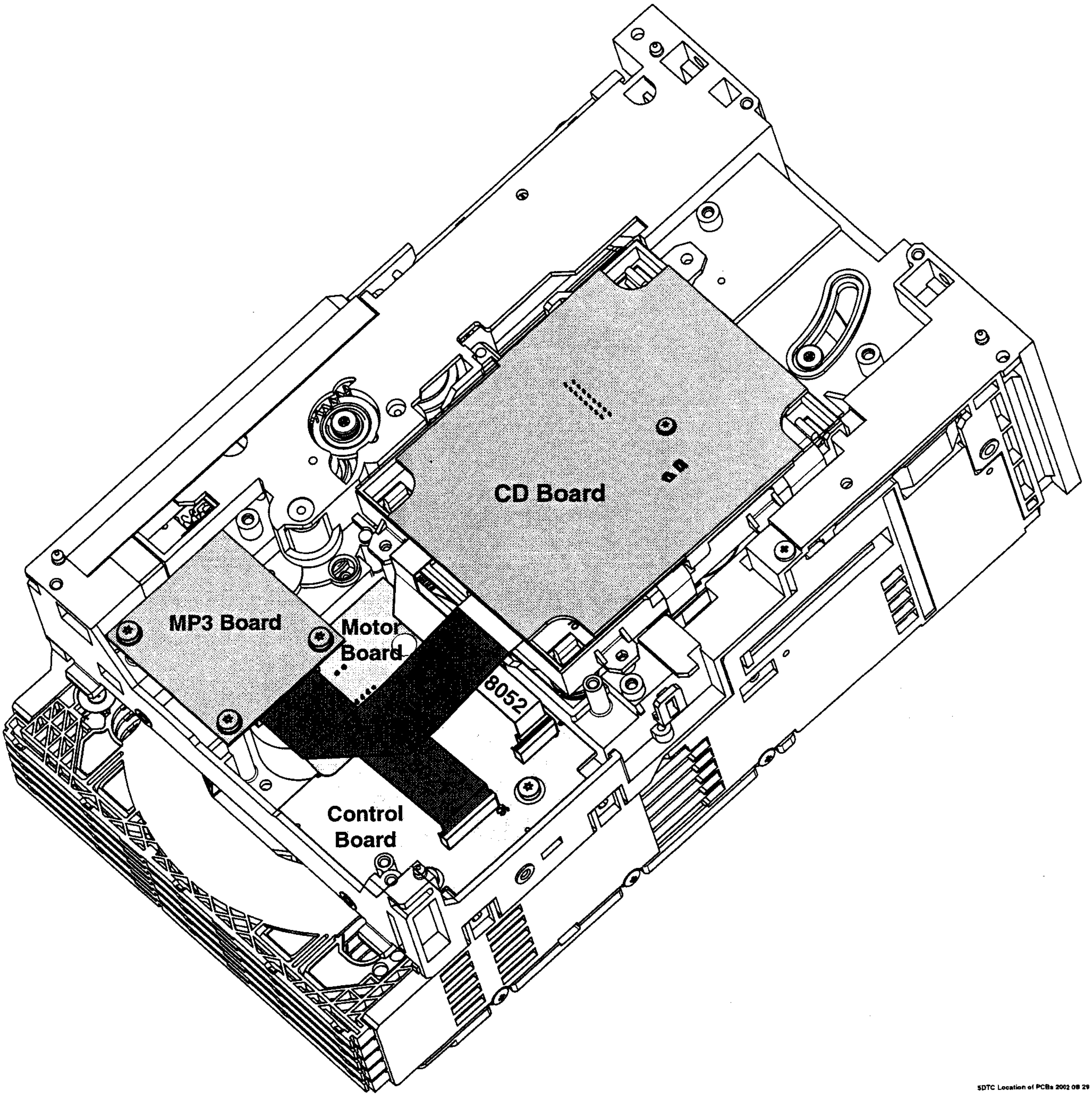


he following steps have to be done when replacing the CD mechanism:
Desolder disc and slide motor
Loosen 2x screw
Disconnect flexfoil from old CD drive
Put a paperclip over contacts of flexfoil to short-circuit the contacts (fig.1)
Remove old CD drive
Mount new CD drive to CD board
Solder disc and slide motor **after** fixing the drive to the board
Move slide outside
Remove paperclip from flexfoil
Connect flexfoil to new CD drive
Remove ESD-protection (solder joint) from laserunit (see picture below)

ttention: The laser diode of this CD drive is protected against ESD by a solder joint which shortcircuits the laserdiode to ground.
For proper functionality of the CD drive this solder joint must be removed **after** connection the drive to the set.

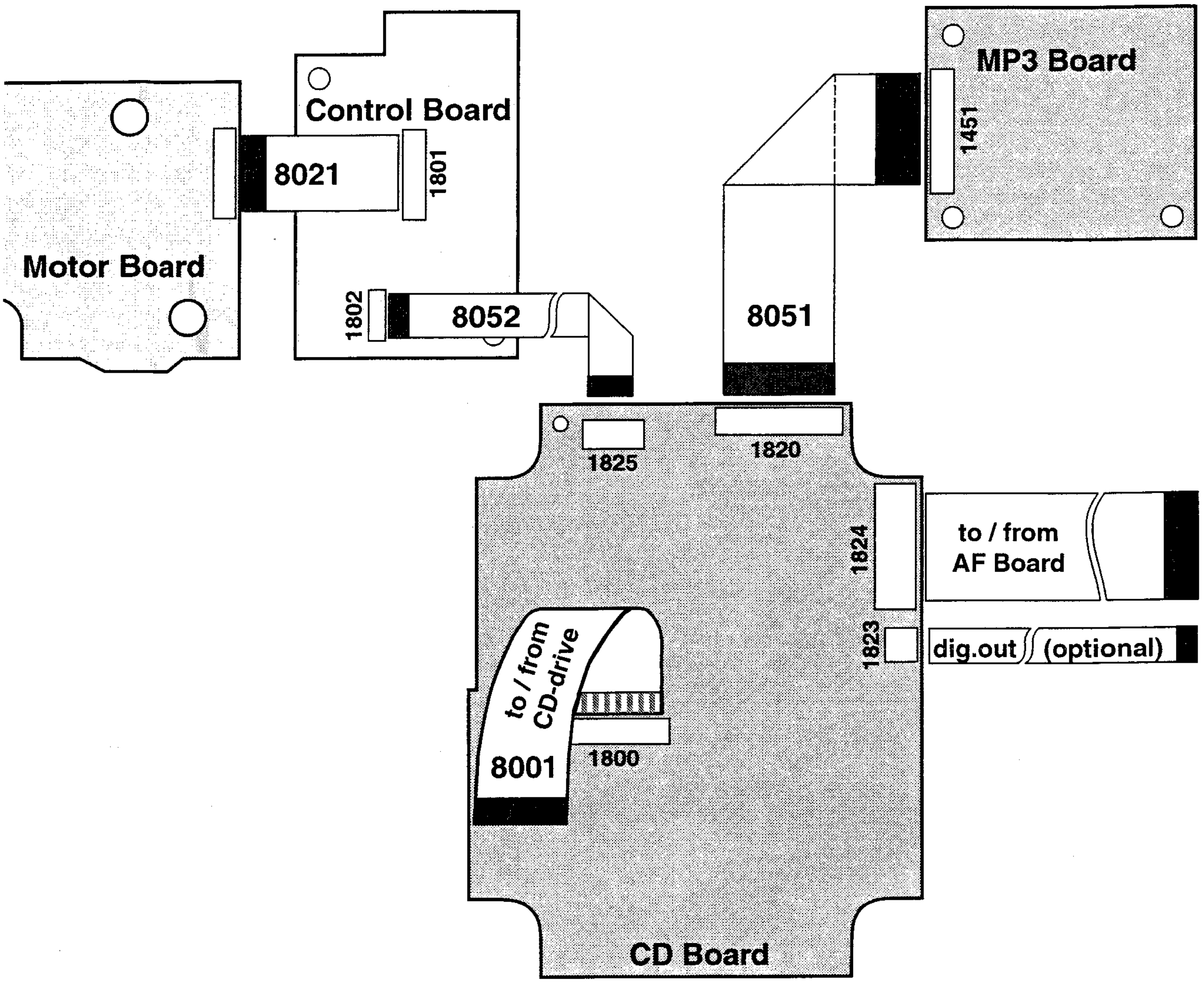


Location of Printed Circuit Boards


CD Board
MP3 Board
Motor Board
Control Board
8052

SDTC Location of PCBs 2002 08 29

Wiring Diagram 5DTC Module


Control Board
MP3 Board
Motor Board
8021
1801
1451
1802
8052
8051
1825
1820
1824
to / from
AF Board
1823
dig.out
(optional)
to / from
CD-drive
8001
1800
CD Board

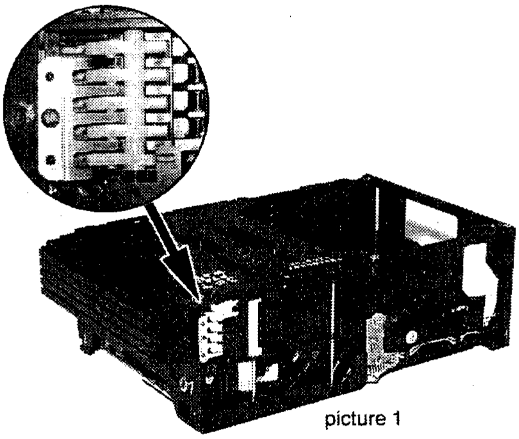
5DTC Wiring Diagram 2002 08 30

The FFC-Cables are available as sparepart.

8001	3103 308 93090	FFC CABLE 16Pin 80mm BD	Connection from CD Board to CD Drive
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD	Connection from CD Board to MP3 Board
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD	Connection from CD Board to Control Board
8021	3103 308 93110	FFC-CABLE 16Pin 60mm AD	Connection from Control Board to Motor Board

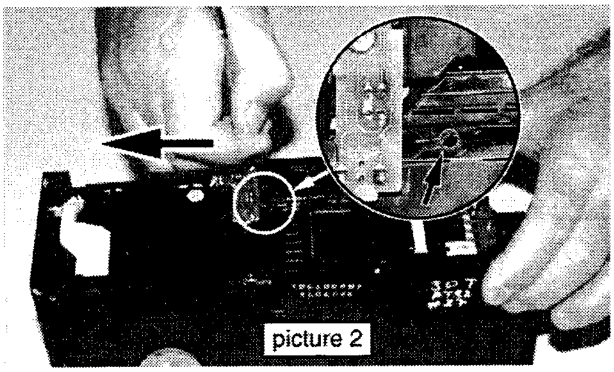
Emergency opening of the trays

The trays of the 5DTC are mechanically locked.



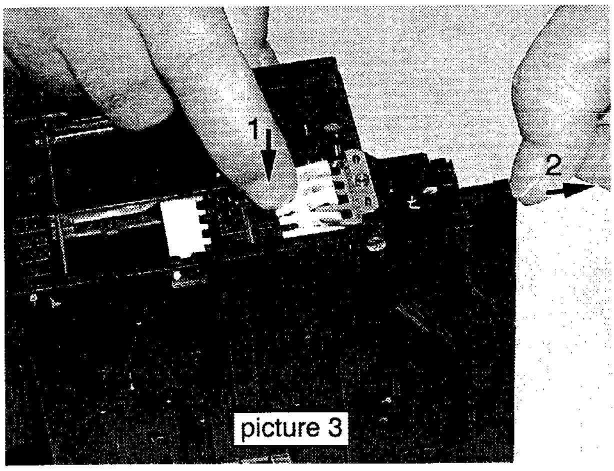
picture 1

To open tray 1, 2 and 3 move lever (pos 29) backwards (e.g. with a screwdriver - see picture 2) to its endposition.



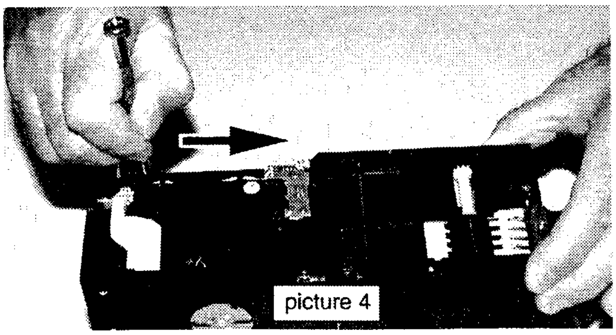
picture 2

Release the locking mechanism and pull out the tray (see picture 3).



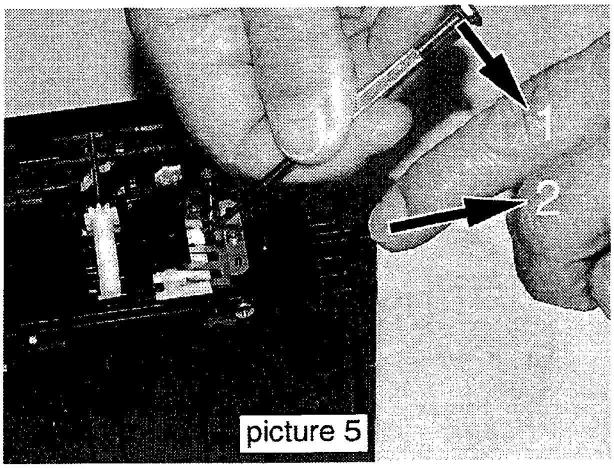
picture 3

To open tray 4 and 5 move lever (pos 29) forward to its endposition (see picture 4).



picture 4

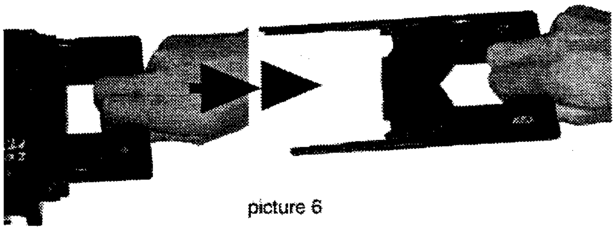
Release snap as shown in picture 5 and pull tray out.



picture 5

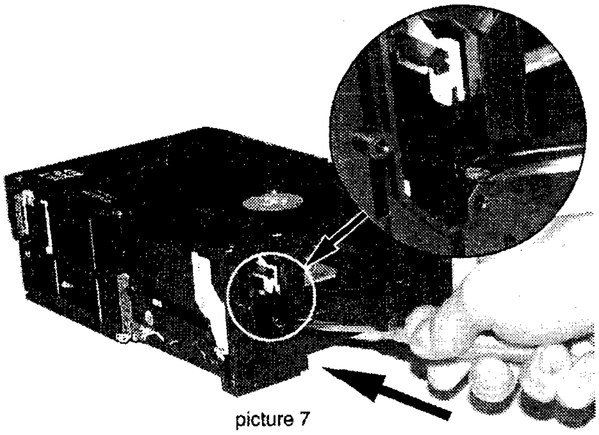
To remove a CD from Play Position perform following steps:

1. Open tray 1 as described before.
2. Tear the tray out with speed (see picture 6). The tray can be inserted aftewards without any alignment.



picture 6

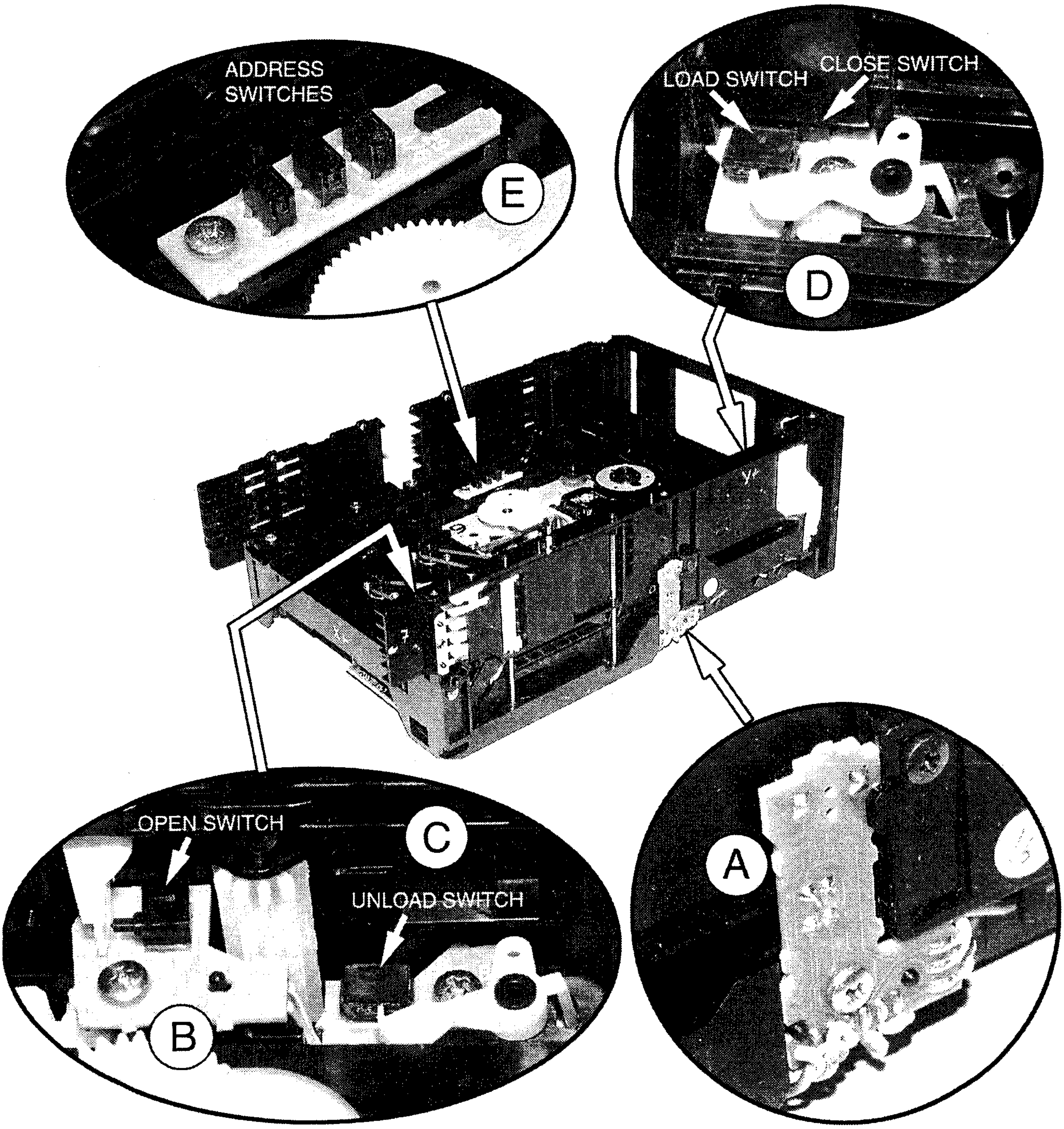
3. Move lever (pos 29) forward to its endposition (see picture 4).
4. Push lever (pos 31) forward (see picture 7).



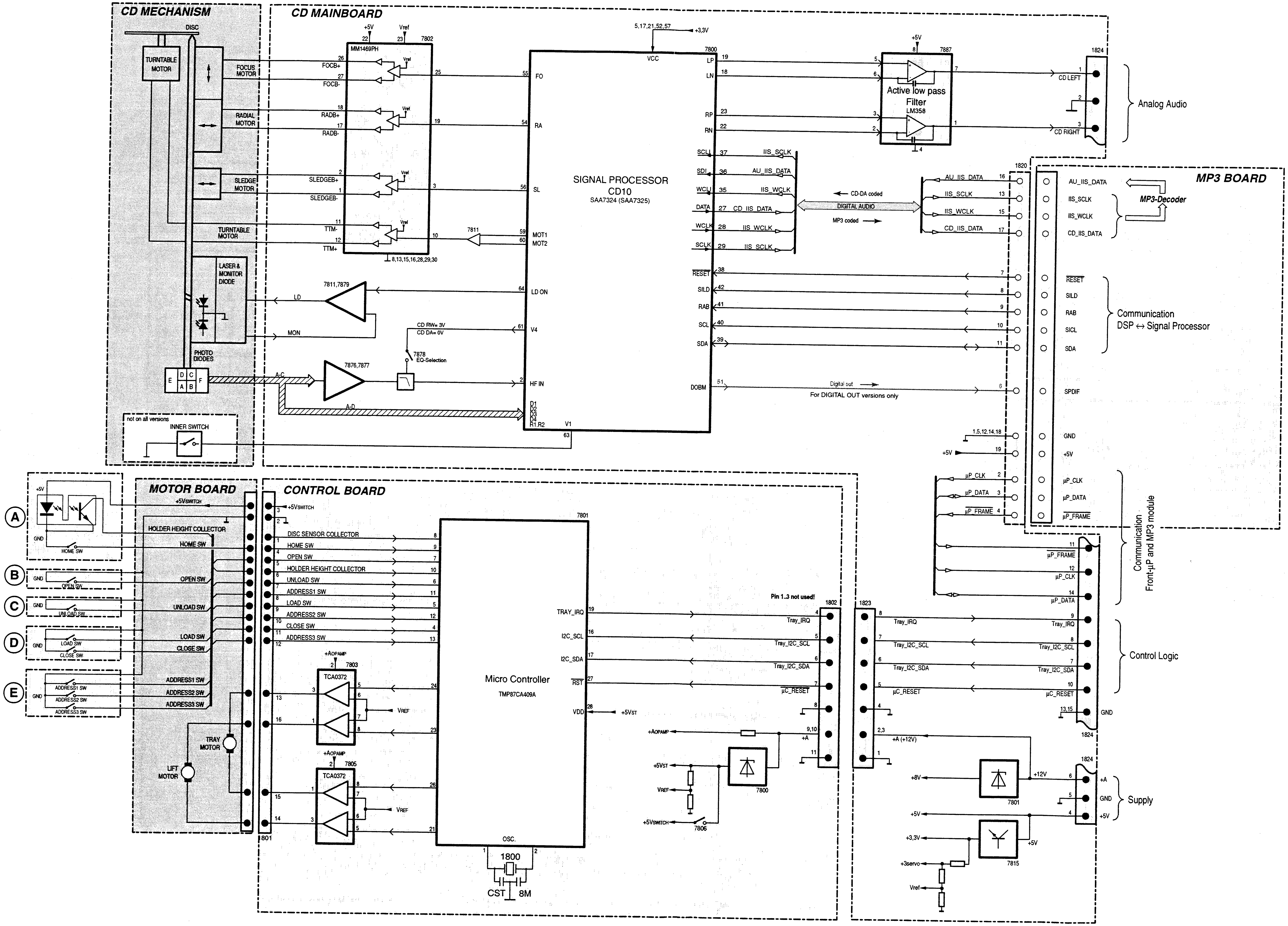
picture 7

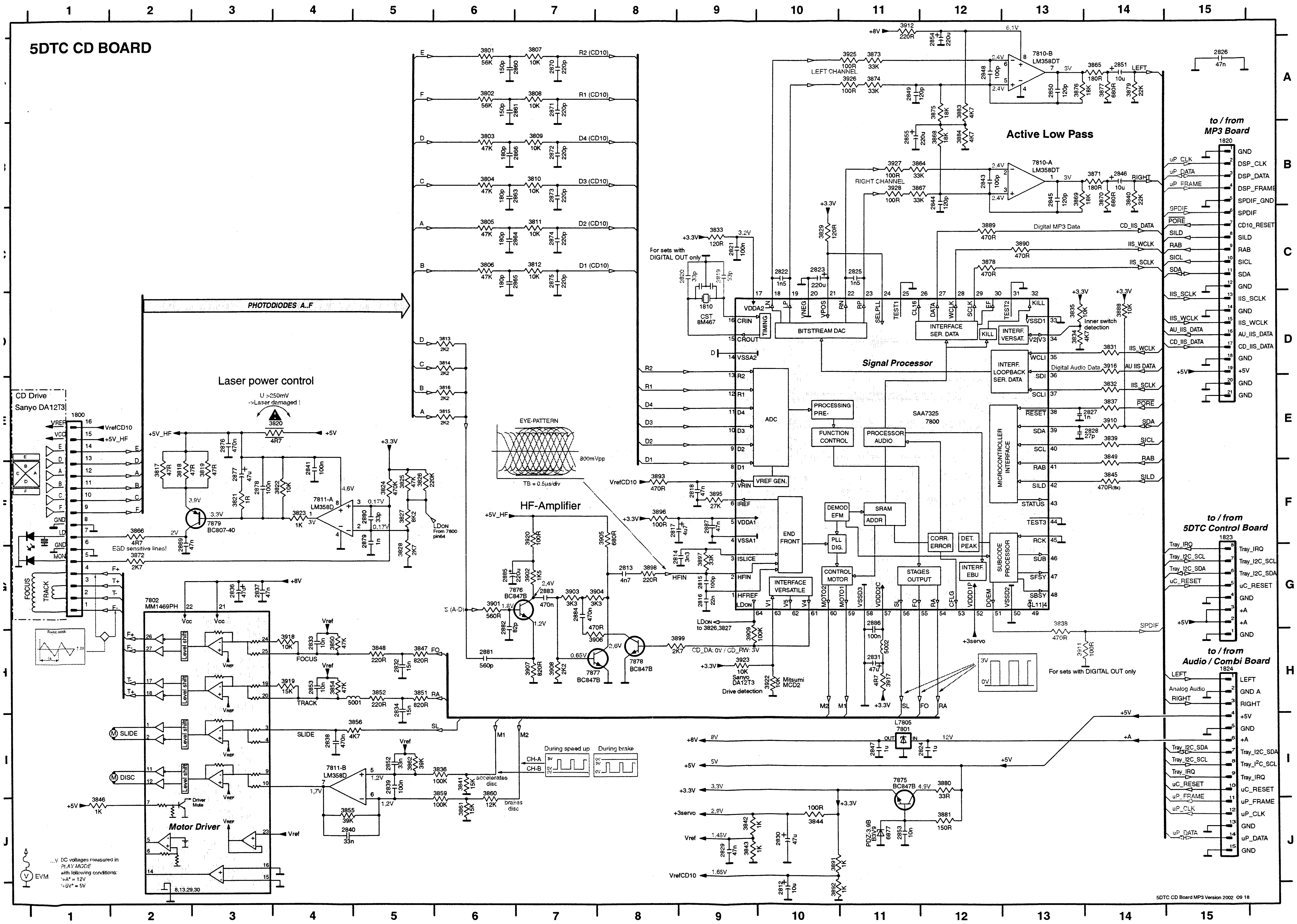
5. Remove CD.

.ocation of switches


ADDRESS
SWITCHES
E
LOAD SWITCH
CLOSE SWITCH
D
OPEN SWITCH
C
UNLOAD SWITCH
B
A

BLOCK DIAGRAM 5DTC MP3 Version

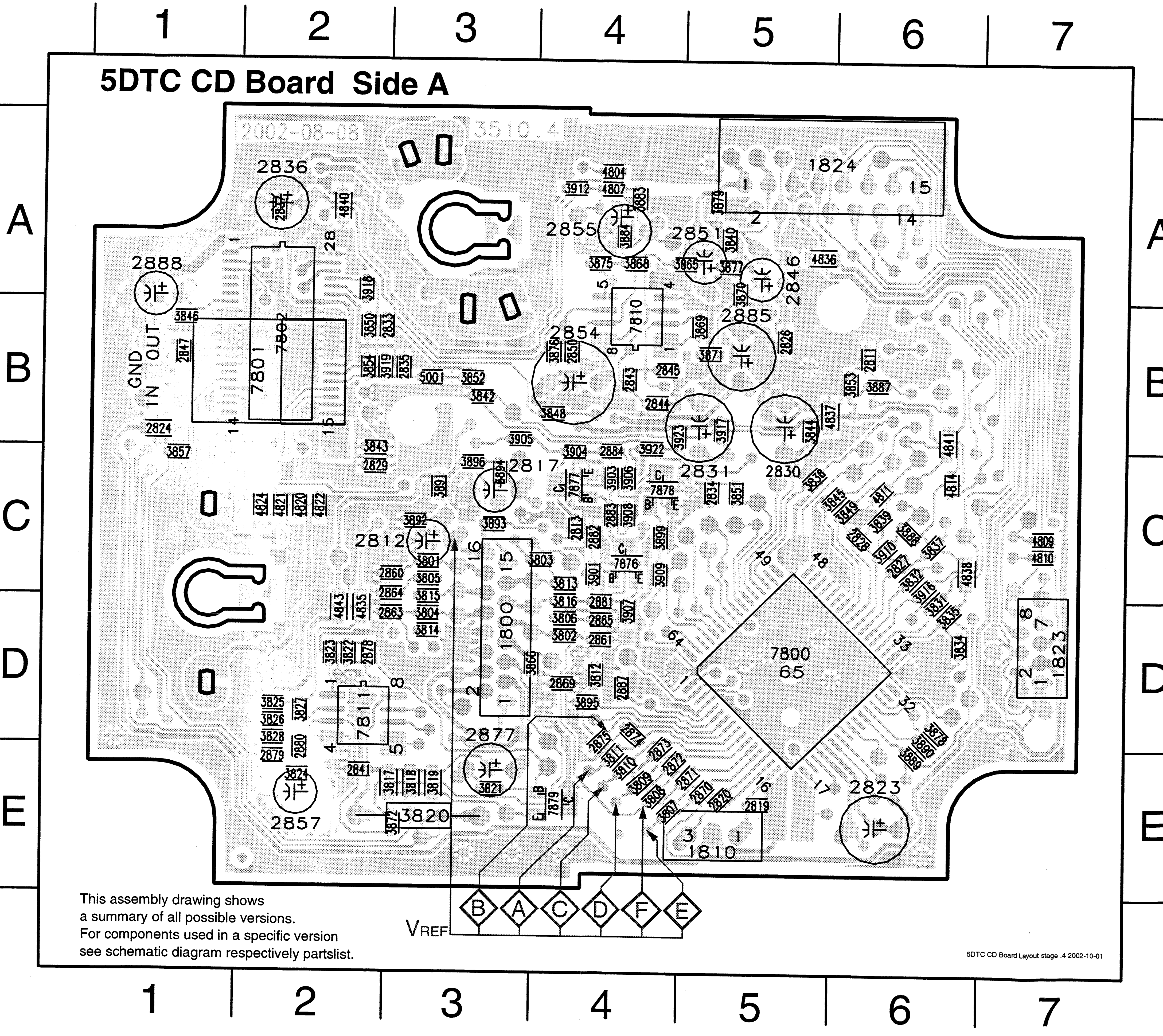

CD MECHANISM
DISC
TURNTABLE MOTOR
FOCUS MOTOR
RADIAL MOTOR
SLEDGE MOTOR
TURNTABLE MOTOR
LASER & MONITOR DIODE
PHOTO DIODES
not on all versions
INNER SWITCH
CD MAINBOARD
+5V
Vref
7802
MM1469PH
FOCB+
FOCB-
RADB+
RADB-
SLEDGEB+
SLEDGEB-
TTM-
TTM+
8,13,15,16,28,29,30
7811
7811,7879
LD
MON
CD RW= 3V
CD DA= 0V
7878
EQ-Selection
7876,7877
A-C
A-D
5,17,21,52,57
+3,3V
7800
VCC
SIGNAL PROCESSOR
CD10
SAA7324 (SAA7325)
FO
RA
SL
MOT1
MOT2
LD ON
V4
HF IN
D1 D2 D3 D4 R1,R2
V1
LP
LN
RP
RN
SCLK
SDI
WCLI
DATA
WCLK
SCLK
RESET
SILD
RAB
SCL
SDA
DOBM
IIS_SCLK
AU_IIS_DATA
IIS_WCLK
CD_IIS_DATA
IIS_WCLK
IIS_SCLK
CD-DA coded
DIGITAL AUDIO
MP3 coded
Digital out
For DIGITAL OUT versions only
+5V
7887
Active low pass Filter
LM358
1824
CD LEFT
CD RIGHT
Analog Audio
1820
MP3 BOARD
AU_IIS_DATA
IIS_SCLK
IIS_WCLK
CD_IIS_DATA
MP3-Decoder
RESET
SILD
RAB
SICL
SDA
Communication DSP ↔ Signal Processor
SPDIF
GND
+5V
1,5,12,14,18
µP_CLK
µP_DATA
µP_FRAME
Communication Front-µP and MP3 module
MOTOR BOARD
+5VSWITCH
HOLDER HEIGHT COLLECTOR
HOME SW
OPEN SW
UNLOAD SW
LOAD SW
CLOSE SW
ADDRESS1 SW
ADDRESS2 SW
ADDRESS3 SW
TRAY MOTOR
LIFT MOTOR
A
B
C
D
E
GND
CONTROL BOARD
7801
DISC SENSOR COLLECTOR
HOME SW
OPEN SW
HOLDER HEIGHT COLLECTOR
UNLOAD SW
ADDRESS1 SW
LOAD SW
ADDRESS2 SW
CLOSE SW
ADDRESS3 SW
+AOPAMP
7803
TCA0372
7805
VREF
Micro Controller
TMP87CA409A
TRAY_IRQ
I2C_SCL
I2C_SDA
RST
VDD
+5VST
OSC.
1800
CST 8M
Pin 1..3 not used!
1802
1823
Tray_IRQ
Tray_I2C_SCL
Tray_I2C_SDA
µC_RESET
+A
+A (+12V)
7800
7806
+5VSWITCH
1801
Control Logic
+8V
+12V
7801
+5V
+3,3V
+3servo
Vref
7815
+A
GND
+5V
Supply
1824


5DTC CD BOARD
PHOTODIODES A..F
Laser power control
U >250mV
->Laser damaged !
CD Drive
Sanyo DA12T3
1800
VrefCD10
+5V_HF
ESD sensitive lines!
7879
BC807-40
7811-A
LM358D
LDON
From 7800
pin64
FOCUS
TRACK
7802
MM1469PH
Level shift
SLIDE
DISC
Driver
Mute
Motor Driver
7811-B
LM358D
accelerates
disc
brakes
disc
During speed up
During brake
CH-A
CH-B
M1
M2
EYE-PATTERN
800mVpp
TB = 0.5µs/div
HF-Amplifier
7876
BC847B
7877
BC847B
7878
BC847B
CD_DA: 0V / CD_RW: 3V
Sanyo
DA12T3
Drive detection
Mitsumi
MCD2
For sets with
DIGITAL OUT only
CST
8M467
1810
LEFT CHANNEL
RIGHT CHANNEL
7810-B
LM358DT
7810-A
LM358DT
Active Low Pass
LEFT
RIGHT
BITSTREAM DAC
INTERFACE
SER. DATA
KILL
INTERF.
VERSAT.
Inner switch
detection
Signal Processor
INTERF.
LOOPBACK
SER. DATA
Digital Audio Data
Digital MP3 Data
ADC
PROCESSING
PRE-
FUNCTION
CONTROL
PROCESSOR
AUDIO
SAA7325
7800
MICROCONTROLLER
INTERFACE
VREF GEN.
FRONT
END
DEMOD
EFM
SRAM
ADDR
PLL
DIG.
CORR.
ERROR
DET.
PEAK
SUBCODE
PROCESSOR
CONTROL
MOTOR
STAGES
OUTPUT
INTERF.
EBU
INTERFACE
VERSATILE
+3servo
For sets with DIGITAL OUT only
L7805
7801
7875
BC847B
PDZ-3.6B
to / from
MP3 Board
1820
GND
DSP_CLK
DSP_DATA
DSP_FRAME
SPDIF_GND
SPDIF
CD10_RESET
SILD
RAB
SICL
SDA
GND
IIS_SCLK
GND
IIS_WCLK
AU_IIS_DATA
CD_IIS_DATA
GND
+5V
GND
GND
to / from
5DTC Control Board
1823
Tray_IRQ
Tray_I2C_SCL
Tray_I2C_SDA
uC_RESET
GND
+A
+A
GND
to / from
Audio / Combi Board
1824
LEFT
GND A
Analog Audio
RIGHT
+5V
GND
+A
Tray_I2C_SDA
Tray_I2C_SCL
Tray_IRQ
uC_RESET
uP_FRAME
uP_CLK
GND
uP_DATA
GND
DC voltages measured in
PLAY MODE
with following conditions:
"+A" = 12V
"+8V" = 5V
EVM
5DTC CD Board MP3 Version 2002 09 18

MAPPING FOR CIRCUIT DIAGRAM

1800	E1	3827	F5
1810	D9	3828	G5
1820	B15	3829	C10
1823	F15	3831	D14
1824	H15	3832	E14
2187	F9	3833	C9
2812	J10	3834	D13
2813	G8	3835	D13
2814	G9	3836	I6
2815	G9	3837	E14
2816	G9	3838	G13
2817	F9	3839	E14
2818	F9	3840	B14
2819	C9	3841	I6
2820	C9	3842	J9
2821	C9	3843	J9
2822	C10	3844	J10
2823	C10	3845	F14
2824	I12	3846	J1
2825	C11	3847	H5
2826	A15	3848	H5
2827	E13	3849	F14
2828	E13	3850	H4
2829	J9	3851	H5
2830	J10	3852	H5
2831	H11	3854	H4
2832	H5	3855	J4
2833	H4	3856	I5
2834	H5	3859	I6
2836	G3	3860	I6
2837	G3	3861	J6
2838	I4	3862	I5
2839	I5	3864	B11
2840	J4	3865	A14
2841	F4	3866	F2
2843	B12	3867	B11
2844	B12	3868	B12
2845	B13	3869	B13
2846	B14	3870	B14
2847	I11	3871	B14
2848	A12	3872	G2
2849	A11	3873	A11
2850	A13	3874	A11
2851	A14	3875	A12
2852	I5	3876	A13
2853	H4	3877	A14
2853	J11	3878	C12
2854	A12	3879	A14
2855	B11	3880	I12
2860	A6	3881	J12
2861	A6	3883	A12
2863	B6	3884	B12
2864	C6	3888	D14
2865	C6	3889	C12
2866	B6	3890	C13
2869	F2	3891	J10
2870	A7	3892	J10
2871	A7	3893	F8
2872	B7	3895	F9
2873	B7	3896	F8
2874	C7	3897	G9
2875	C7	3898	G8
2876	E3	3899	H8
2877	F3	3901	G6
2878	F3	3902	G7
2879	F5	3903	G7
2880	F5	3904	G8
2881	H6	3905	F8
2882	G6	3906	H8
2884	G7	3907	H7
2885	G6	3908	H7
2886	G11	3909	H9
2893	G7	3910	E14
3801	A6	3911	H13
3802	A6	3912	A11
3803	B6	3917	H11
3804	B6	3918	H4
3805	C6	3919	H4
3806	C6	3920	F7
3807	A7	3922	H10
3808	A7	3923	H9
3809	B7	3925	A11
3810	B7	3926	A11
3811	C7	3927	B11
3812	C7	3928	B11
3813	D6	5001	H5
3814	D6	5002	H11
3815	E6	6877	J11
3816	D14	7800	D11
3816	E6	7801	I11
3817	F2	7802	G2
3818	F2	7810-A	B13
3819	F3	7810-B	A13
3820	E4	7811-A	F4
3821	F3	7811-B	I4
3822	F4	7875	I11
3823	F4	7876	G7
3824	F5	7877	H8
3825	F5	7878	H8
3826	F5	7879	F3

5DTC CD Board Side A



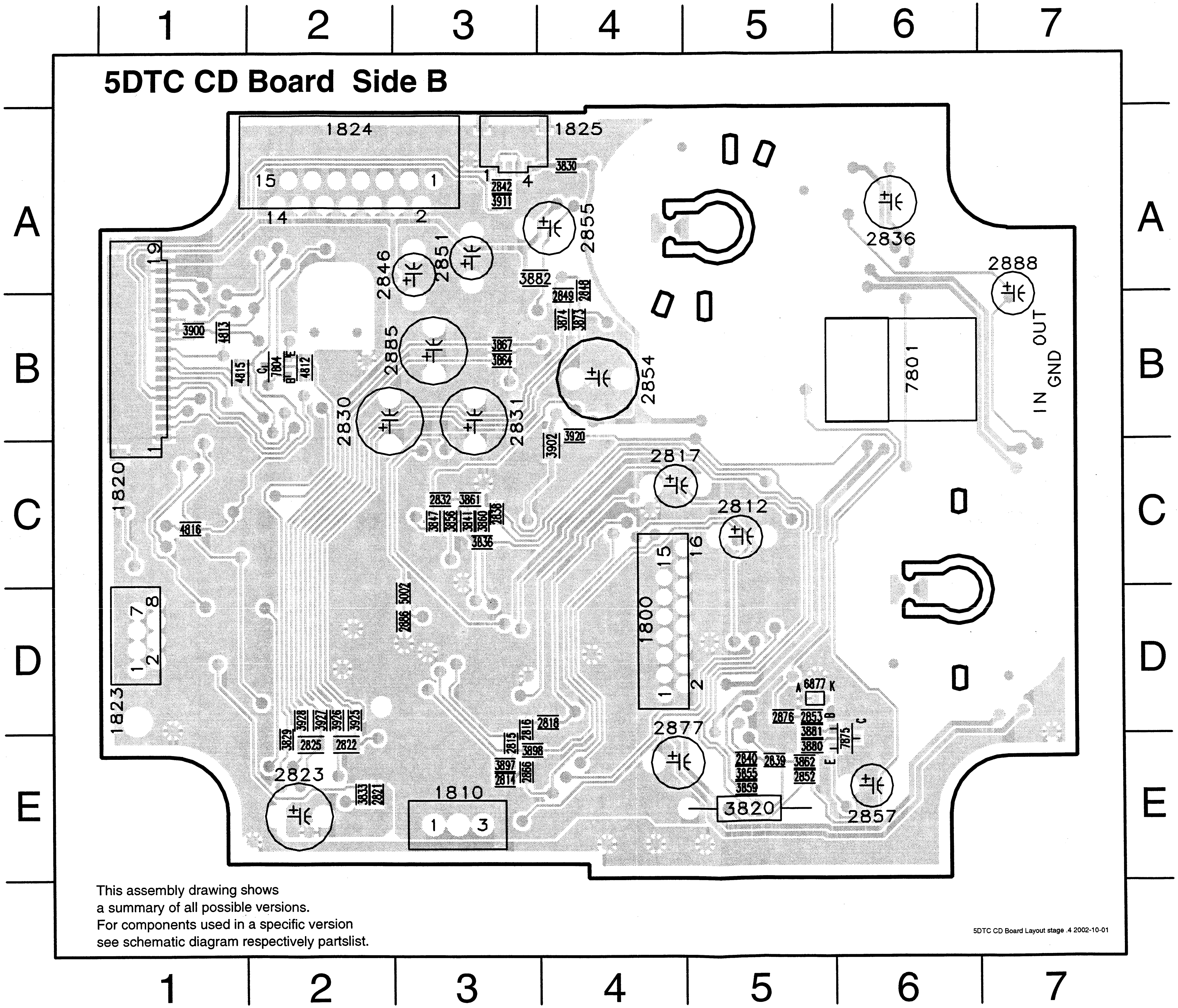
This assembly drawing shows
a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

5DTC CD Board Layout stage .4 2002-10-01

MAPPING FOR COMPONENT LAYOUT

1800	D3	3851	C5
1810	E5	3852	B3
1823	D7	3853	B6
1824	A5	3854	B2
2811	B6	3857	C1
2812	C3	3865	A4
2813	C4	3866	D3
2817	C3	3868	A4
2819	E5	3869	B5
2820	E5	3870	A5
2823	E6	3871	B5
2824	B1	3872	E3
2826	B5	3875	A4
2827	C6	3876	B4
2828	C6	3877	A5
2829	C2	3878	D6
2830	B5	3879	A5
2831	B5	3883	A4
2833	B2	3884	A4
2834	C5	3887	B6
2835	B3	3888	C6
2836	A2	3889	E6
2837	A2	3890	E6
2841	E2	3891	C3
2843	B4	3892	C3
2844	B4	3893	C3
2845	B4	3894	C3
2846	A5	3895	D4
2847	B1	3896	C3
2850	B4	3899	C4
2851	A5	3901	C4
2854	B4	3903	C4
2855	A4	3904	C4
2857	E2	3905	B3
2860	C3	3906	C4
2861	D4	3907	D4
2863	D3	3908	C4
2864	D3	3909	C4
2865	D4	3910	C6
2869	D4	3912	A4
2870	E5	3916	C6
2871	E5	3917	B5
2872	E4	3918	A2
2873	E4	3919	B2
2874	D4	3922	C4
2875	E4	3923	B4
2877	D3	4804	A4
2878	D2	4807	A4
2879	E2	4809	C7
2880	E2	4810	C7
2881	D4	4811	C6
2882	C4	4814	C6
2883	C4	4820	C2
2884	C4	4821	C2
2885	B5	4822	C2
2887	D4	4824	C2
2888	A1	4835	D2
3801	C3	4836	A5
3802	D4	4837	B5
3803	C4	4838	C6
3804	D3	4840	A2
3805	C3	4841	B6
3806	D4	4843	D2
3807	E4	5001	B3
3808	E4	7800	C6
3809	E4	7801	B2
3810	E4	7802	B2
3811	E4	7810	B4
3812	D4	7811	D2
3813	C4	7876	C4
3814	D3	7877	C4
3815	D3	7878	C4
3816	D4	7879	E4
3817	E3		
3818	E3		
3819	E3		
3820	E3		
3821	E3		
3822	D2		
3823	D2		
3824	E2		
3825	D2		
3826	D2		
3827	D2		
3828	D2		
3831	D6		
3832	C6		
3834	D6		
3835	D6		
3837	C6		
3838	C5		
3839	C6		
3840	A5		
3842	B3		
3843	C2		
3844	B5		
3845	C6		
3846	B1		
3848	B4		
3849	C6		
3850	B2		

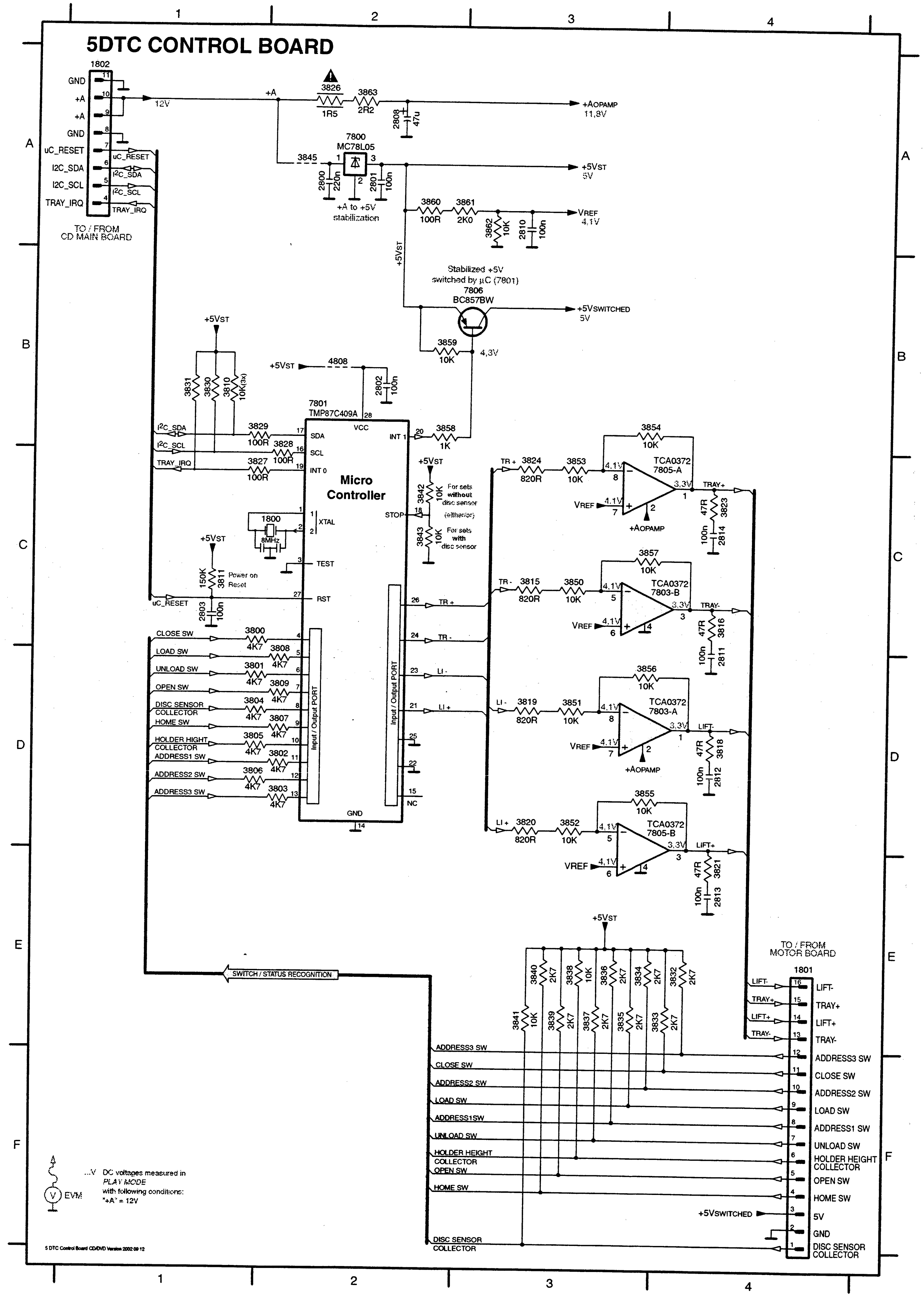
5DTC CD Board Side B


1
2
3
4
5
6
7
A
B
C
D
E
1824
15
1
14
2
1825
1
4
3830
2842
3911
2855
2851
2846
3882
2849
2848
3874
3873
19
1820
3900
4813
4815
C
7804
B
E
4812
2885
3867
3864
2854
2830
2831
3902
3920
2836
2888
7801
OUT
GND
IN
2817
2812
2832
3861
3847
3856
3841
3860
2838
3836
4816
16
15
1800
1
2
5002
2886
7
8
1
2
1823
3829
3928
3927
3926
3925
2825
2822
2815
2816
2818
3898
3897
2814
2866
2823
3833
2821
1810
1
3
2877
6877
A
K
2876
2853
3881
3880
B
C
E
7875
2840
3855
3859
2839
3862
2852
3820
2857

This assembly drawing shows
a summary of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist.

5DTC CD Board Layout stage .4 2002-10-01

1800	D5
1810	E3
1820	C1
1823	D1
1824	A3
1825	A4
2812	C5
2814	E4
2815	E4
2816	D4
2817	C5
2818	D4
2821	E3
2822	E3
2823	E2
2825	E2
2830	B2
2831	B4
2832	C3
2836	A6
2838	C4
2839	E5
2840	E5
2842	A4
2846	A3
2848	A4
2849	B4
2851	A3
2852	E6
2853	D6
2854	B5
2855	A4
2857	E6
2866	E4
2876	D5
2877	D5
2885	B3
2886	D3
2888	A7
3820	E5
3829	E2
3830	A4
3833	E3
3836	C3
3841	C3
3847	C3
3855	E5
3856	C3
3859	E5
3860	C3
3861	C3
3862	E6
3864	B4
3867	B4
3873	B4
3874	B4
3880	E6
3881	D6
3882	A4
3897	E4
3898	E4
3900	B1
3902	C4
3911	A4
3920	B4
3925	D3
3926	D2
3927	D2
3928	D2
4812	B2
4813	B2
4815	B2
4816	C1
5002	D3
6877	D6
7801	B6
7804	B2
7875	E6



5DTC CONTROL BOARD

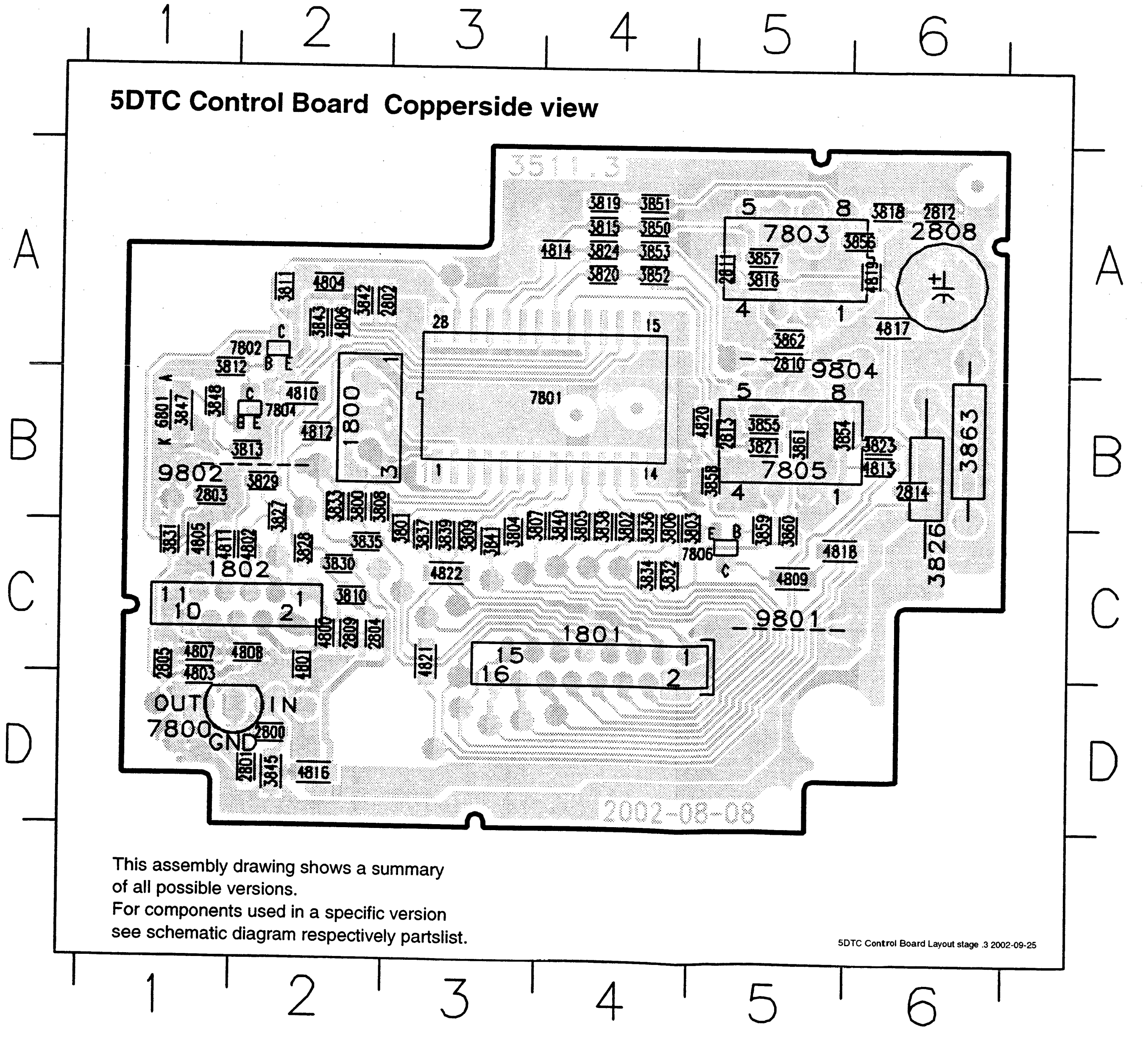
1802
GND
+A
+A
GND
uC_RESET
I2C_SDA
I2C_SCL
TRAY_IRQ
TO / FROM CD MAIN BOARD
12V
3826 1R5
3863 2R2
2808 47u
+AOPAMP 11,9V
7800 MC78L05
3845
2800 220n
2801 100n
+A to +5V stabilization
+5VST 5V
3860 100R
3861 2K0
3862 10K
2810 100n
VREF 4.1V
+5VST
Stabilized +5V switched by µC (7801)
7806 BC857BW
+5VSWITCHED 5V
3859 10K
4.3V
+5VST
4808
2802 100n
3831
3830
3810 10K
7801 TMP87C409A
3829 100R
3828 100R
3827 100R
SDA
SCL
INT 0
VCC
INT 1
3858 1K
Micro Controller
STOP
3842 10K For sets without disc sensor (ethernet)
3843 10K For sets with disc sensor
1800 8MHz
XTAL
TEST
RST
+5VST
3811 150K
2803 100n
Power on Reset
CLOSE SW
LOAD SW
UNLOAD SW
OPEN SW
DISC SENSOR COLLECTOR
HOME SW
HOLDER HIGHT COLLECTOR
ADDRESS1 SW
ADDRESS2 SW
ADDRESS3 SW
3800 4K7
3808 4K7
3801 4K7
3809 4K7
3804 4K7
3807 4K7
3805 4K7
3802 4K7
3806 4K7
3803 4K7
Input / Output PORT
Input / Output PORT
GND
NC
TR+
TR-
LI-
LI+
3824 820R
3853 10K
3854 10K
TCA0372 7805-A
3.3V
TRAY+
3823 47R
2814 100n
+AOPAMP
3815 820R
3850 10K
3857 10K
TCA0372 7803-B
TRAY-
3816 47R
2811 100n
3819 820R
3851 10K
3856 10K
TCA0372 7803-A
LIFT-
3818 47R
2812 100n
3820 820R
3852 10K
3855 10K
TCA0372 7805-B
LIFT+
3821 47R
2813 100n
VREF
4.1V
SWITCH / STATUS RECOGNITION
+5VST
3840 2K7
3838 10K
3836 2K7
3834 2K7
3832 2K7
3841 10K
3839 2K7
3837 2K7
3835 2K7
3833 2K7
TO / FROM MOTOR BOARD
1801
LIFT-
TRAY+
LIFT+
TRAY-
ADDRESS3 SW
CLOSE SW
ADDRESS2 SW
LOAD SW
ADDRESS1 SW
UNLOAD SW
HOLDER HEIGHT COLLECTOR
OPEN SW
HOME SW
+5VSWITCHED
5V
GND
DISC SENSOR COLLECTOR
...V DC voltages measured in PLAY MODE with following conditions: "+A" = 12V
EVM
5DTC Control Board CD/DVD Version 2002 09 12
A
B
C
D
E
F
1
2
3
4

MAPPING FOR CIRCUIT DIAGRAM

1800	C2	2810	A3	3804	D1	3811	C1	3824	C3	3833	E4	3841	E3	3854	B3	3862	A3	7805-B	D3
1801	E4	2811	D4	3805	D1	3815	C3	3826	A2	3834	E3	3842	C2	3855	D3	3863	A2	7806	B3
1802	A1	2812	D4	3806	D1	3816	C4	3827	C1	3835	E3	3843	C2	3856	D3	4808	B2		
2800	A2	2813	E4	3807	D2	3818	D4	3828	C2	3836	E3	3845	A2	3857	C3	7800	A2		
2801	A2	2814	C4	3808	D1	3819	D3	3829	B1	3837	E3	3850	C3	3858	B2	7801	B2		
2802	B2	3800	C1	3808	D2	3820	D3	3830	B1	3838	E3	3851	D3	3859	B3	7803-A	D3		
2803	C1	3802	D2	3809	D2	3821	E4	3831	B1	3839	E3	3852	D3	3860	A2	7803-B	C3		
2808	A2	3803	D2	3810	B1	3823	C4	3832	E4	3840	E3	3853	C3	3861	A2	7805-A	C3		

MAPPING FOR COMPONENT LAYOUT

1800	B2	2810	A5	3806	C4	3819	A4	3832	C4	3843	A2	3857	A5	4804	A2	4816	D2	7803	A5
1801	C4	2811	A5	3807	C3	3820	A4	3833	B2	3845	D2	3858	B5	4805	C1	4817	A6	7804	B2
1802	C2	2812	A6	3808	B2	3821	B5	3834	C4	3847	B1	3859	C5	4806	A2	4818	C5	7806	C5
2800	D2	2813	B5	3809	C3	3823	B6	3835	C2	3848	B1	3860	C5	4807	C1	4819	A6	9801	C5
2801	D2	2814	B6	3810	C2	3824	A4	3836	C4	3850	A4	3861	B5	4808	C2	4820	B5	9802	B2
2802	A2	3800	B2	3811	A2	3826	B6	3837	C3	3851	A4	3862	A5	4809	C5	4821	C3	9804	A5
2803	B1	3801	C3	3812	A1	3827	B2	3838	C4	3852	A4	3863	B6	4810	B2	4822	C3		
2804	C2	3802	C4	3813	B2	3828	C2	3839	C3	3853	A4	4800	C2	4811	C1	6801	B1		
2805	C1	3803	C4	3815	A4	3829	B2	3840	C4	3854	B5	4801	C2	4812	B2	7800	D2		
2808	A6	3804	C3	3816	A5	3830	C2	3841	C3	3855	B5	4802	C2	4813	B6	7801	B4		
2809	C2	3805	C4	3818	A6	3831	C1	3842	A2	3856	A6	4803	D1	4814	A4	7802	A2		



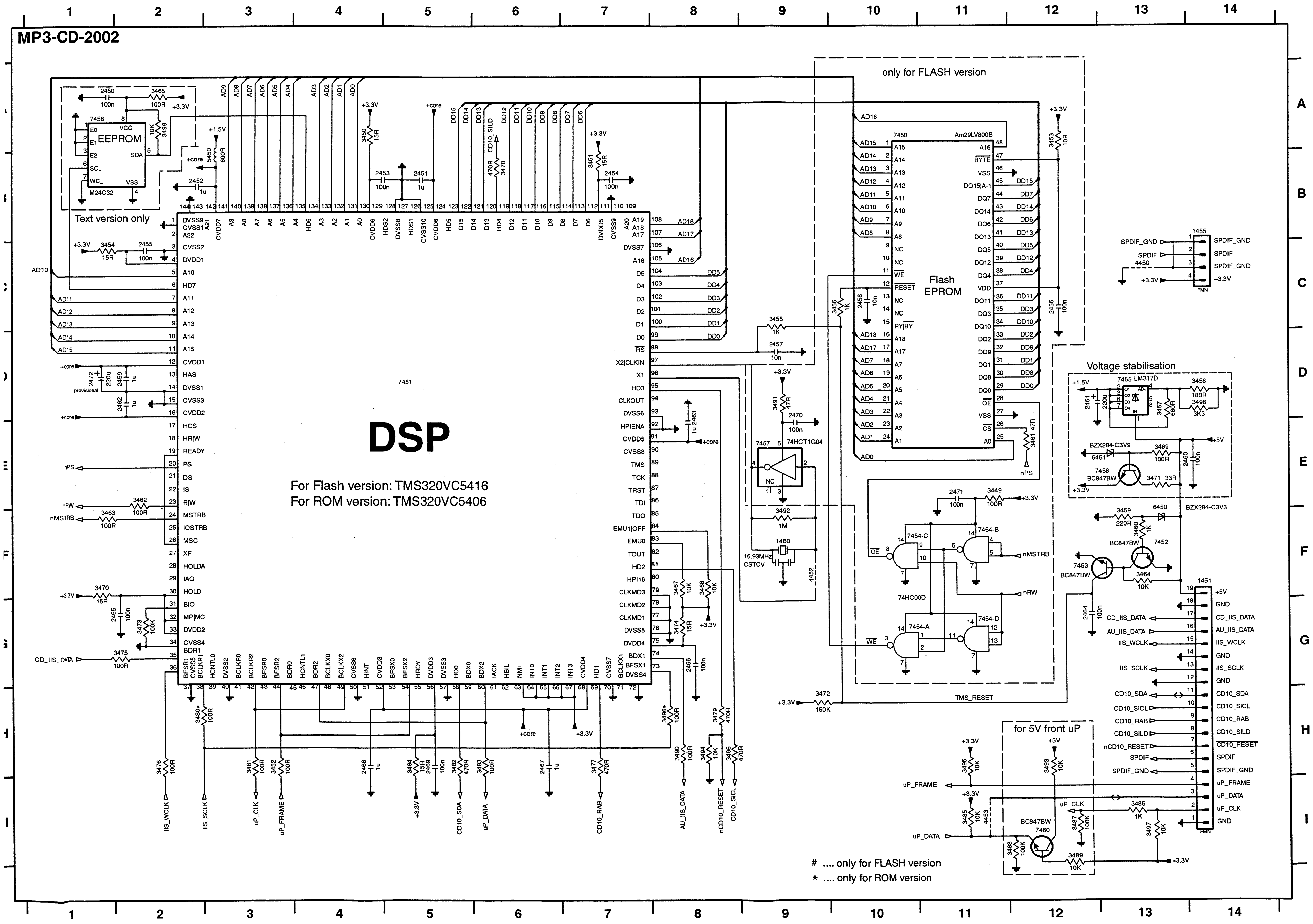
5DTC Control Board Copperside view

1
2
3
4
5
6
A
B
C
D
3511.3
3819
3851
3815
3850
4814
3824
3853
3820
3852
7803
3856
3818
2812
2808
3857
3816
2811
4819
4817
3811
4804
3843
4806
3842
2802
28
15
7801
3862
2810
9804
7802
3812
4810
6801
3847
3848
7804
4812
1800
4820
2813
3855
3821
3861
3854
3823
7805
4813
3858
2814
3863
9802
3813
3829
2803
3827
3828
3835
3833
3800
3808
3801
3837
3839
3809
3804
3807
3840
3805
3802
3836
3806
3803
7806
3859
3860
4818
3826
3831
4805
4811
3802
1802
3830
4822
3834
3832
4809
3810
9801
4800
2809
2804
1801
4807
4808
3805
4803
4801
4821
OUT
IN
GND
7800
2800
2801
3845
4816
2002-08-08

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

5DTC Control Board Layout stage .3 2002-09-25

IP3 BOARD - CIRCUIT DIAGRAM


MP3-CD-2002
Text version only
EEPROM
M24C32
DSP
7451
For Flash version: TMS320VC5416
For ROM version: TMS320VC5406
only for FLASH version
Flash EPROM
Am29LV800B
Voltage stabilisation
LM317D
74HCT1G04
74HC00D
for 5V front uP
16.93MHz CSTCV
1455
1451

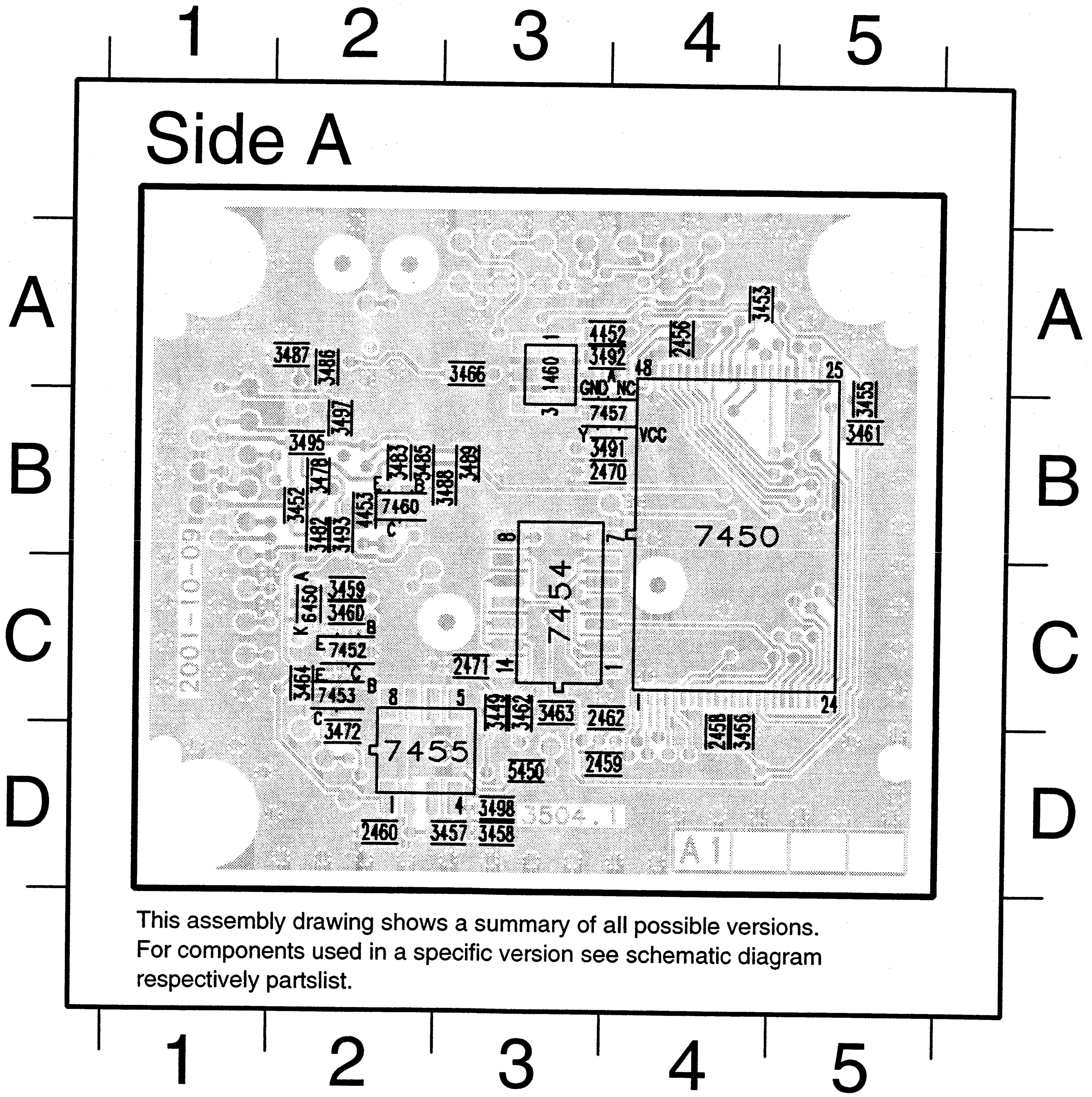
# .... only for FLASH version

* .... only for ROM version

2451	B5
2452	B2
2453	B4
2454	B7
2455	C2
2456	C12
2457	D9
2458	C10
2459	D2
2460	E13
2461	D12
2462	D2
2463	D8
2464	G12
2465	G2
2466	G8
2467	H6
2468	H4
2469	H5
2470	D9
2471	E11
2472	D1
3449	E11
3450	A4
3451	B7
3452	H3
3453	A12
3454	C1
3455	C9
3456	C10
3457	D13
3458	D14
3459	F13
3460	F13
3461	E12
3462	E2
3463	F1
3464	F13
3465	A2
3466	H8
3467	F8
3468	F8
3469	E13
3470	F1
3471	E13
3472	H9
3473	G2
3474	G8
3475	G2
3476	H2
3477	H7
3478	B6
3479	H8
3480	H2
3481	H3
3482	H5
3483	H6
3484	H5
3485	I11
3486	I13
3487	I12
3488	I12
3489	I12
3490	H8
3491	D9
3492	F9
3493	H12
3494	H8
3495	H11
3496	H8
3497	I13
3498	D14
3499	A2
4450	C13
4452	F9
4453	I11
5450	B3
6450	E13
6451	E13
7450	A10
7451	D5
7452	F13
7453	F12
7454-A	G11
7454-B	F11
7454-C	F11
7454-D	G11
7455	D13
7456	E12
7457	E9
7458	A1
7460	I12

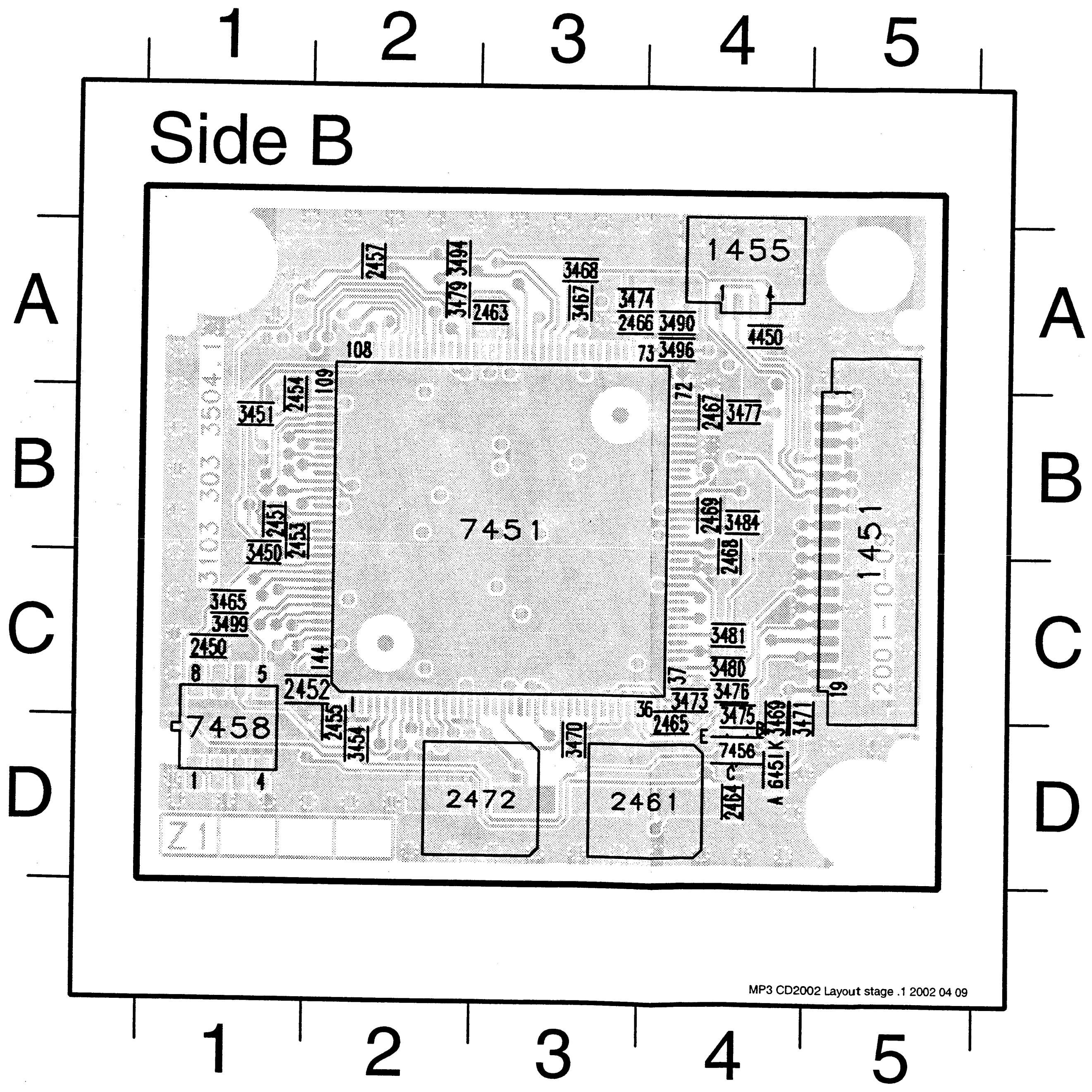
MP3 BOARD - COMPONENT LAYOUT

1460	A3	3449	C3	3460	C2	3482	B2	3492	A3	6450	C2
2456	A4	3452	B2	3461	B5	3483	B2	3493	B2	7450	B4
2458	D4	3453	A4	3462	C3	3485	B2	3495	B2	7452	C2
2459	D4	3455	B5	3463	C3	3486	A2	3497	B2	7453	C2
2460	D2	3456	D4	3464	C2	3487	A2	3498	D3	7454	C3
2462	C4	3457	D3	3466	A3	3488	B3	4452	A3	7455	D2
2470	B4	3458	D3	3472	D2	3489	B3	4453	B2	7457	B4
2471	C3	3459	C2	3478	B2	3491	B4	5450	D3	7460	B2


Side A
1
2
3
4
5
A
B
C
D
7450
7454
7455
1460
7457
7460
7452
7453
6450
2001-10-09
3504.1
A1
GND
NC
VCC
48
25
24
8
14
3487
3486
3466
4452
3492
2456
3453
3455
3461
3497
3495
3478
3483
3485
3488
3489
3491
2470
3452
3482
3493
4453
3459
3460
3464
2471
3449
3462
3463
2462
2458
3456
3472
5450
2459
3498
2460
3457
3458

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1451	B5	2457	A2	2469	B4	3469	C4	3479	A2	4450	A4
1455	A4	2461	D4	2472	D3	3470	D3	3480	C4	6451	D4
2450	C1	2463	A3	3450	C1	3471	C4	3481	C4	7451	B3
2451	B1	2464	D4	3451	B1	3473	C4	3484	B4	7456	D4
2452	C2	2465	D4	3454	D2	3474	A3	3490	A4	7458	D1
2453	B1	2466	A3	3465	C1	3475	C4	3494	A2		
2454	B1	2467	B4	3467	A3	3476	C4	3496	A4		
2455	D2	2468	B4	3468	A3	3477	B4	3499	C1		


Side B
1
2
3
4
5
A
B
C
D
7451
7458
1455
1451
2472
2461
7456
6451
2001-10
3103 303 3504.1
Z1
108
109
73
72
144
37
36
19
2457
3479
3494
2463
3468
3467
3474
2466
3490
3496
4450
3451
2454
2467
3477
2451
2453
3450
2469
3484
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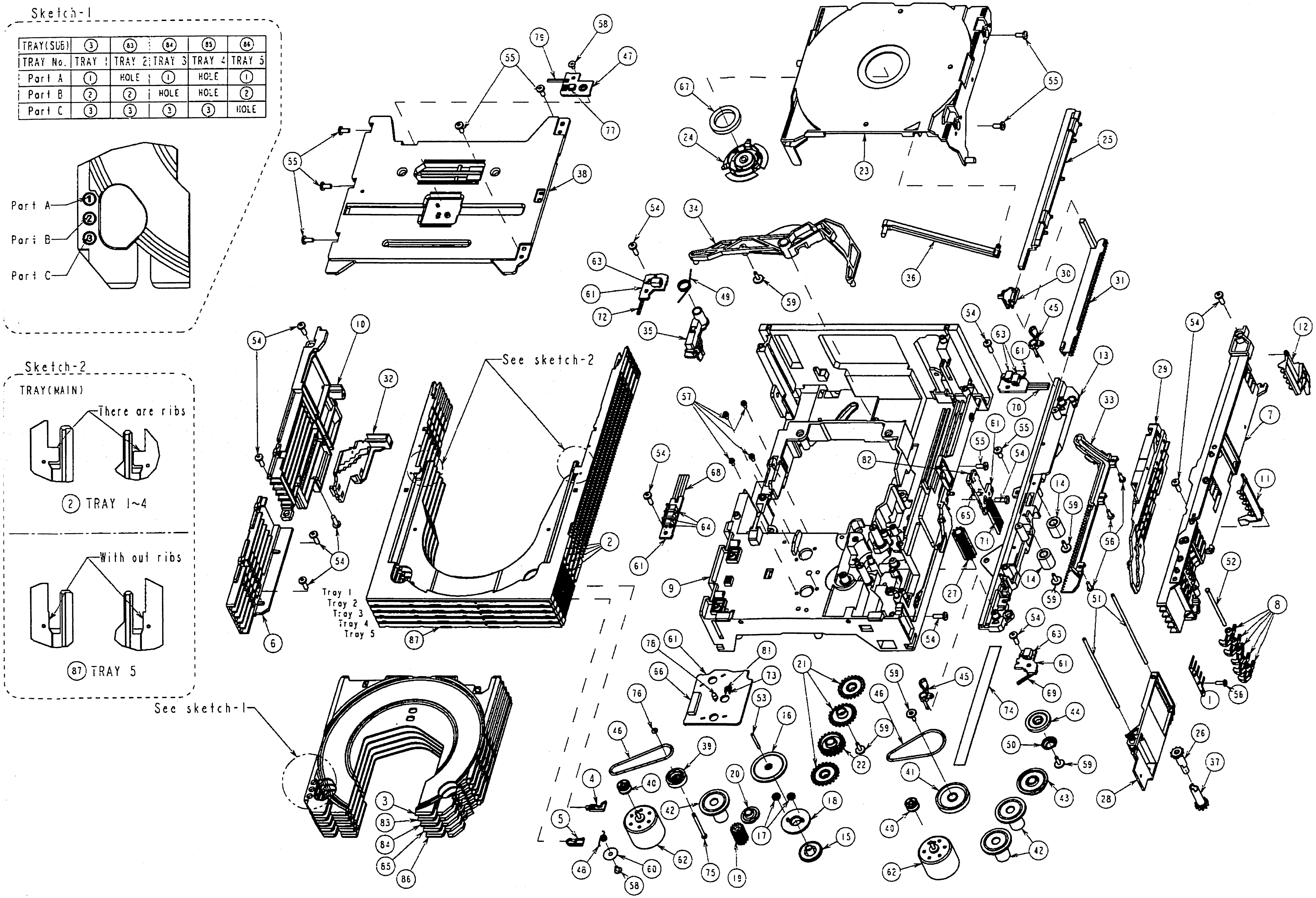
3470
2464

MP3 CD2002 Layout stage .1 2002 04 09

xploded view 5DTC mechanic - for orientation only



Sketch-1

TRAY(SUB)	③	(83)	(84)	(85)	(86)
TRAY No.	TRAY 1	TRAY 2	TRAY 3	TRAY 4	TRAY 5
Part A	①	HOLE	①	HOLE	①
Part B	②	②	HOLE	HOLE	②
Part C	③	③	③	③	HOLE

Part A
Part B
Part C
①
②
③
Sketch-2
TRAY(MAIN)
There are ribs
② TRAY 1~4
With out ribs
(87) TRAY 5
See sketch-1
See sketch-2
Tray 1
Tray 2
Tray 3
Tray 4
Tray 5
(55) (58) (79) (47) (77) (38) (10) (32) (54) (6) (2) (87) (3) (83) (84) (85) (86)
(67) (24) (23) (25) (34) (36) (63) (61) (72) (49) (59) (35) (30) (31) (45) (70) (13) (33) (29) (12) (7) (11)
(57) (68) (64) (9) (82) (65) (71) (27) (14) (56) (52) (8) (51) (69) (74) (1) (26) (37) (28)
(78) (81) (73) (66) (76) (53) (16) (21) (22) (46) (39) (40) (42) (62) (4) (5) (48) (60) (75) (19) (20) (17) (18) (15) (41) (44) (50) (43)

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board

MECHANICAL PARTS

	3103 308 54710	**5DTC Module** (mechanic w/o electronic)
201	3103 309 05390	CD DRIVE DA12T3
252	4822 529 10387	Rubber damper CD DRIVE, FRONT
253	4822 529 10386	Rubber damper CD DRIVE, REAR

MISCELLANEOUS

	3103 308 67020	**MP3 Board**
1800	4822 267 11028	FFC-CONNECTOR 16P, Side entry
1820	2422 025 17303	FFC-CONNECTOR 19P, Side entry
1823	2422 025 16371	FFC-CONNECTOR 8P, Side entry
1824	4822 265 10979	FFC-CONNECTOR, 15P, Side entry
8001	3103 308 93090	FFC CABLE 16Pin 80mm BD
8051	3103 308 93100	FFC-CABLE 19Pin 90mm AD
8052	3103 308 93120	FFC CABLE 8Pin 80mm BD

CAPACITORS

2812	4822 124 11947	10µF	20%	16V
2813©	4822 126 13193	4,7nF	10%	63V
2814©	5322 126 11579	3,3nF	10%	63V
2815©	2020 552 94427	100pF	5%	50V
2816©	3198 017 42230	22nF	10%	50V
2817	4822 124 22726	4,7µF	20%	35V
2818©	3198 024 44730	47nF	5%	50V
2821©	2238 586 59812	100nF	10%	50V
2822©	4822 126 13344	1,5nF	5%	63V
2823	4822 124 42383	220µF	20%	4V
2824©	4822 126 14043	1µF	20%	16V
2825©	4822 126 13344	1,5nF	5%	63V
2826©	3198 017 34730	47nF	10%	16V
2827©	5322 126 11578	1nF	10%	63V
2828©	4822 126 11669	27pF	10%	50V
2829©	3198 017 34730	47nF	10%	16V
2830	4822 124 81286	47µF	20%	16V
2831	4822 124 81286	47µF	20%	16V
2832©	3198 017 31530	15nF	10%	50V
2833©	5322 126 11583	10nF	10%	63V
2834©	3198 017 31530	15nF	10%	50V
2835©	5322 126 11583	10nF	10%	63V
2836	4822 124 40433	47µF	20%	25V
2837©	3198 017 34730	47nF	10%	16V
2838©	3198 017 44740	470nF	20%	10V
2839©	2238 586 59812	100nF	10%	50V
2840©	4822 126 14549	33nF	10%	16V
2841©	2238 586 59812	100nF	10%	50V
2843©	2020 552 94427	100pF	5%	50V
2844©	5322 122 33861	120pF	5%	NP0
2845©	5322 122 33861	120pF	5%	NP0
2846	4822 124 40248	10µF	20%	63V
2847©	3198 017 41050	1µF	20%	10V
2848©	2020 552 94427	100pF	5%	50V
2849©	5322 122 33861	120pF	5%	NP0
2850©	5322 122 33861	120pF	5%	NP0
2851	4822 124 40248	10µF	20%	63V
2852©	4822 126 14549	33nF	10%	16V
2853©	5322 126 11583	10nF	10%	63V
2854	4822 124 12245	220µF	20%	16V
2855	4822 124 11912	220µF	20%	6,3V
2860©	4822 122 33753	150pF	5%	50V
2861©	4822 122 33753	150pF	5%	50V
2863©	4822 126 14508	180pF	5%	50V
2864©	4822 126 14508	180pF	5%	50V
2865©	4822 126 14508	180pF	5%	50V
2866©	4822 126 14508	180pF	5%	50V
2869©	3198 017 34730	47nF	10%	16V
2870©	4822 126 13883	220pF	5%	50V
2871©	4822 126 13883	220pF	5%	50V
2872©	4822 126 13883	220pF	5%	50V
2873©	4822 126 13883	220pF	5%	50V
2874©	4822 126 13883	220pF	5%	50V
2875©	4822 126 13883	220pF	5%	50V
2876©	3198 017 44740	470nF	20%	10V
2877	4822 124 40433	47µF	20%	25V
2878©	2238 586 59812	100nF	10%	50V
2879©	5322 126 11578	1nF	10%	63V
2880©	2222 867 15339	33pF	5%	50V
2881©	4822 126 14249	560pF	10%	50V
2882©	4822 126 14226	82pF		50V
2883©	3198 017 44740	470nF	20%	10V
2884©	3198 017 44740	470nF	20%	10V
2885	4822 124 40196	220µF	20%	16V
2886©	2238 586 59812	100nF	10%	50V
2887©	3198 017 34730	47nF	10%	16V

RESISTORS

3801©	4822 051 30563	56kΩ	5%	0,06W
3802©	4822 051 30563	56kΩ	5%	0,06W
3803©	4822 117 12925	47kΩ	1%	0,06W
3804©	4822 117 12925	47kΩ	1%	0,06W
3805©	4822 117 12925	47kΩ	1%	0,06W
3806©	4822 117 12925	47kΩ	1%	0,06W
3807©	4822 051 30103	10kΩ	5%	0,06W
3808©	4822 051 30103	10kΩ	5%	0,06W
3809©	4822 051 30103	10kΩ	5%	0,06W
3810©	4822 051 30103	10kΩ	5%	0,06W
3811©	4822 051 30103	10kΩ	5%	0,06W
3812©	4822 051 30103	10kΩ	5%	0,06W
3813©	4822 051 30222	2,2kΩ	5%	0,06W
3814©	4822 051 30222	2,2kΩ	5%	0,06W
3815©	4822 051 30222	2,2kΩ	5%	0,06W
3816©	4822 051 30222	2,2kΩ	5%	0,06W
3817©	4822 051 30479	47Ω	5%	0,06W
3818©	4822 051 30479	47Ω	5%	0,06W
3819©	4822 051 30479	47Ω	5%	0,06W
3820▲	4822 052 10478	4,7Ω	5%	NFR25
3821©	4822 117 12917	1Ω	5%	0,06W
3822©	4822 051 30103	10kΩ	5%	0,06W
3823©	4822 051 30102	1kΩ	5%	0,06W
3824©	4822 051 30474	470kΩ	5%	0,06W
3825©	5322 117 13029	47kΩ	1%	0,06W
3826©	4822 117 12891	220kΩ	1%	0,06W
3827©	5322 117 13056	8,2kΩ	1%	0,06W
3828©	5322 117 13052	2,7kΩ	1%	0.06W
3829©	4822 051 30121	120Ω	5%	0,06W
3831©	4822 051 30471	470Ω	5%	0,06W
3832©	4822 051 30471	470Ω	5%	0,06W
3833©	4822 051 30121	120Ω	5%	0,06W
3834©	4822 051 30472	4,7kΩ	5%	0,06W
3836©	4822 117 13632	100kΩ	1%	0,06W
3837©	4822 051 30471	470Ω	5%	0,06W
3839©	4822 051 30471	470Ω	5%	0,06W
3840©	4822 051 30223	22kΩ	5%	0,06W
3841©	4822 051 30153	15kΩ	5%	0,06W
3842©	4822 051 30102	1kΩ	5%	0,06W
3843©	4822 051 30102	1kΩ	5%	0,06W
3844©	4822 051 30101	100Ω	5%	0,06W
3845©	4822 051 30471	470Ω	5%	0,06W

LECTRICAL PARTSLIST 5DTC MODULE MP3CD Version CD Board

ESISTORS

846©	4822 051 30102	1kΩ	5%	0,06W
847©	4822 117 12968	820Ω	5%	0,06W
848©	4822 051 30221	220Ω	5%	0,06W
849©	4822 051 30471	470Ω	5%	0,06W
850©	4822 117 12925	47kΩ	1%	0,06W
851©	4822 117 12968	820Ω	5%	0,06W
852©	4822 051 30221	220Ω	5%	0,06W
854©	4822 117 12925	47kΩ	1%	0,06W
855©	4822 051 30393	39kΩ	5%	0,06W
856©	4822 051 30472	4,7kΩ	5%	0,06W
857©	4822 051 30008	CHIP JUMPER 0603		
859©	4822 117 13632	100kΩ	1%	0,06W
860©	4822 051 30123	12kΩ	5%	0,06W
861©	4822 051 30153	15kΩ	5%	0,06W
862©	4822 051 30393	39kΩ	5%	0,06W
864©	4822 051 30333	33kΩ	5%	0,06W
865©	4822 051 30181	180Ω	5%	0,06W
866©	4822 117 13608	4,7Ω	5%	0,06W
867©	4822 051 30333	33kΩ	5%	0,06W
868©	4822 051 30183	18kΩ	5%	0,06W
3869©	4822 051 30183	18kΩ	5%	0,06W
3870©	4822 051 30681	680Ω	5%	0,06W
3871©	4822 051 30181	180Ω	5%	0,06W
3872©	4822 051 30272	2,7kΩ	5%	0,06W
3873©	4822 051 30333	33kΩ	5%	0,06W
3874©	4822 051 30333	33kΩ	5%	0,06W
3875©	4822 051 30183	18kΩ	5%	0,06W
3876©	4822 051 30183	18kΩ	5%	0,06W
3877©	4822 051 30681	680Ω	5%	0,06W
3878©	4822 051 30471	470Ω	5%	0,06W
3879©	4822 051 30223	22kΩ	5%	0,06W
3880©	4822 051 30339	33Ω	5%	0,06W
3881©	4822 051 30151	150Ω	5%	0,06W
3883©	4822 051 30472	4,7kΩ	5%	0,06W
3884©	4822 051 30472	4,7kΩ	5%	0,06W
3888©	4822 051 30103	10kΩ	5%	0,06W
3889©	4822 051 30471	470Ω	5%	0,06W
3890©	4822 051 30471	470Ω	5%	0,06W
3891©	4822 051 30102	1kΩ	5%	0,06W
3892©	4822 051 30102	1kΩ	5%	0,06W
3893©	4822 051 30471	470Ω	5%	0,06W
3895©	4822 051 30273	27kΩ	5%	0,06W
3896©	4822 051 30101	100Ω	5%	0,06W
3897©	4822 051 30333	33kΩ	5%	0,06W
3898©	4822 051 30221	220Ω	5%	0,06W
3899©	4822 051 30272	2,7kΩ	5%	0,06W
3901©	4822 051 30561	560Ω	5%	0,06W
3902©	4822 117 11139	1,5kΩ	1%	0,1W
3903©	4822 051 30332	3,3kΩ	5%	0,06W
3904©	4822 051 30332	3,3kΩ	5%	0,06W
3905©	4822 051 30681	680Ω	5%	0,06W
3906©	4822 051 30471	470Ω	5%	0,06W
3907©	4822 117 12968	820Ω	5%	0,06W
3908©	4822 051 30222	2,2kΩ	5%	0,06W
3909©	4822 117 13632	100kΩ	1%	0,06W
3910©	4822 051 30471	470Ω	5%	0,06W
3912©	4822 051 30221	220Ω	5%	0,06W
3916©	4822 051 30471	470Ω	5%	0,06W
3917©	4822 117 13608	4,7Ω	5%	0,06W
3918©	4822 051 30103	10kΩ	5%	0,06W
3919©	4822 051 30153	15kΩ	5%	0,06W
3920©	4822 051 30101	100Ω	5%	0,06W
3923©	4822 051 30103	10kΩ	5%	0,06W

RESISTORS

3925©	4822 051 30101	100Ω	5%	0,06W
3926©	4822 051 30101	100Ω	5%	0,06W
3927©	4822 051 30101	100Ω	5%	0,06W
3928©	4822 051 30101	100Ω	5%	0,06W
4807©	4822 051 30008	CHIP JUMPER 0603		
4809©	4822 051 30008	CHIP JUMPER 0603		
4820©	4822 051 30008	CHIP JUMPER 0603		
4824©	4822 051 30008	CHIP JUMPER 0603		
4835©	4822 051 20008	CHIP JUMPER 0805		
4836©	4822 051 20008	CHIP JUMPER 0805		
4837©	4822 051 20008	CHIP JUMPER 0805		
4838©	4822 051 20008	CHIP JUMPER 0805		
4840©	4822 051 20008	CHIP JUMPER 0805		
4841©	4822 051 20008	CHIP JUMPER 0805		
4843©	4822 051 20008	CHIP JUMPER 0805		

COILS

1810	2422 540 98519	RESONATOR 8,467MHz
5001©	2422 549 44607	FERRITE BEAD
5002©	2422 549 44607	FERRITE BEAD

DIODES

6877©	9322 129 34685	BZX284-C3V9

TRANSISTORS

7875©	5322 130 42755	BC847C
7876©	5322 130 42755	BC847C
7877©	5322 130 42755	BC847C
7878©	5322 130 42755	BC847C
7879©	5322 130 60123	BC807-40

INTEGRATED CIRCUITS

7800©	9352 684 20557	SAA7325H/T/M2B, Signal Processor
7801	4822 209 72554	MC7808CT 8V Regulator
7802©	9322 181 79668	MM1469PH Motor Driver
7810©	5322 209 82941	LM358D, Dual Opamp
7811©	5322 209 82941	LM358D, Dual Opamp

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version Control Board

MECHANICAL PARTS

3103 308 54710	**5DTC Module** (mechanic w/o electronic)

MISCELLANEOUS

1801	2422 025 17065	FFC-CONNECTOR 16P, top entry
1802	2422 025 17788	FFC-CONNECTOR 8P, top entry
8021	3103 308 93110	FFC-CABLE 16Pin 60mm AD

CAPACITORS

2800©	4822 126 13879	220nF	20%	16V
2801©	2238 586 59812	100nF	10%	50V
2802©	2238 586 59812	100nF	10%	50V
2803©	2238 586 59812	100nF	10%	50V
2808	4822 124 40433	47µF	20%	25V
2810©	3198 017 34730	47nF	10%	16V
2811©	2238 586 59812	100nF	10%	50V
2812©	2238 586 59812	100nF	10%	50V
2813©	2238 586 59812	100nF	10%	50V
2814©	2238 586 59812	100nF	10%	50V

RESISTORS

3800©	4822 051 30472	4,7kΩ	5%	0,06W
3801©	4822 051 30472	4,7kΩ	5%	0,06W
3802©	4822 051 30472	4,7kΩ	5%	0,06W
3803©	4822 051 30472	4,7kΩ	5%	0,06W
3804©	4822 051 30472	4,7kΩ	5%	0,06W
3805©	4822 051 30472	4,7kΩ	5%	0,06W
3806©	4822 051 30472	4,7kΩ	5%	0,06W
3807©	4822 051 30472	4,7kΩ	5%	0,06W
3808©	4822 051 30472	4,7kΩ	5%	0,06W
3809©	4822 051 30472	4,7kΩ	5%	0,06W
3810©	4822 051 30103	10kΩ	5%	0,06W
3811©	4822 051 30154	150kΩ	5%	0,0625W
3815©	5322 117 13057	820Ω	1%	0,06W
3816©	4822 051 30479	47Ω	5%	0,06W
3818©	4822 051 30479	47Ω	5%	0,06W
3819©	5322 117 13057	820Ω	1%	0,06W
3820©	5322 117 13057	820Ω	1%	0,06W
3821©	4822 051 30479	47Ω	5%	0,06W
3823©	4822 051 30479	47Ω	5%	0,06W
3824©	5322 117 13057	820Ω	1%	0,06W
3826▲	4822 117 12148	1,5Ω	5%	0,33W
3827©	4822 051 30101	100Ω	5%	0,06W
3828©	4822 051 30101	100Ω	5%	0,06W
3829©	4822 051 30101	100Ω	5%	0,06W
3830©	4822 051 30103	10kΩ	5%	0,06W
3831©	4822 051 30103	10kΩ	5%	0,06W
3832©	4822 051 30272	2,7kΩ	5%	0,06W
3833©	4822 051 30272	2,7kΩ	5%	0,06W
3834©	4822 051 30272	2,7kΩ	5%	0,06W
3835©	4822 051 30272	2,7kΩ	5%	0,06W
3836©	4822 051 30272	2,7kΩ	5%	0,06W
3837©	4822 051 30272	2,7kΩ	5%	0,06W
3838©	4822 051 30103	10kΩ	5%	0,06W
3839©	4822 051 30272	2,7kΩ	5%	0,06W
3840©	4822 051 30272	2,7kΩ	5%	0,06W
3841©	4822 051 30103	10kΩ	5%	0,06W
3842©	4822 051 30103	10kΩ	5%	0,06W
3845©	4822 051 20159	15Ω	5%	0,1W
3850©	4822 117 12706	10kΩ	1%	0,06W
3851©	4822 117 12706	10kΩ	1%	0,06W
3852©	4822 117 12706	10kΩ	1%	0,06W
3853©	4822 117 12706	10kΩ	1%	0,06W
3854©	4822 117 12706	10kΩ	1%	0,06W

RESISTORS

3855©	4822 117 12706	10kΩ	1%	0,06W
3856©	4822 117 12706	10kΩ	1%	0,06W
3857©	4822 117 12706	10kΩ	1%	0,06W
3858©	4822 051 30102	1kΩ	5%	0,06W
3859©	4822 051 30103	10kΩ	5%	0,06W
3860©	5322 117 13017	100Ω	1%	0,06W
3861©	2322 704 62002	2kΩ	1%	0,06W
3862©	4822 117 12706	10kΩ	1%	0,06W
3863	4822 053 10228	2,2Ω	5%	1W
4800©	4822 051 30008	CHIP JUMPER 0603		
4802©	4822 051 30008	CHIP JUMPER 0603		
4803©	4822 051 30008	CHIP JUMPER 0603		
4804©	4822 051 30008	CHIP JUMPER 0603		
4805©	4822 051 20008	CHIP JUMPER 0805		
4806©	4822 051 30008	CHIP JUMPER 0603		
4807©	4822 051 30008	CHIP JUMPER 0603		
4808©	4822 051 30008	CHIP JUMPER 0603		
4809©	4822 051 20008	CHIP JUMPER 0805		
4810©	4822 051 20008	CHIP JUMPER 0805		
4811©	4822 051 30008	CHIP JUMPER 0603		
4812©	4822 051 30008	CHIP JUMPER 0603		
4813©	4822 051 30008	CHIP JUMPER 0603		
4814©	4822 051 30008	CHIP JUMPER 0603		
4816©	4822 051 20008	CHIP JUMPER 0805		
4817©	4822 051 20008	CHIP JUMPER 0805		
4818©	4822 051 20008	CHIP JUMPER 0805		
4819©	4822 051 30008	CHIP JUMPER 0603		
4820©	4822 051 30008	CHIP JUMPER 0603		
4821©	4822 051 20008	CHIP JUMPER 0805		
4822©	4822 051 20008	CHIP JUMPER 0805		

COILS

1800	4822 242 72066	CERAMIC FILTER 8,0MHz

TRANSISTORS

7806©	3198 010 42320	BC857BW

INTEGRATED CIRCUITS

7800	4822 209 72042	MC78L05ACP, STABILIZER
7801©	3103 307 01640	TMP87P809M Microcontroller
7803	4822 209 62059	TCA0372DP1, 2-FOLD OP-AMP.
7805	4822 209 62059	TCA0372DP1, 2-FOLD OP-AMP.

ELECTRICAL PARTSLIST 5DTC MODULE MP3CD Version MP3 Board

MISCELLANEOUS

1451	2422 025 17303	FFC-CONNECTOR 19P,side entry

CAPACITORS

2450©	2238 586 59812	100nF	10%	50V
2451©	3198 017 41050	1µF	20%	10V
2452©	3198 017 41050	1µF	20%	10V
2453©	2238 586 59812	100nF	10%	50V
2454©	2238 586 59812	100nF	10%	50V
2455©	2238 586 59812	100nF	10%	50V
2456©	2238 586 59812	100nF	10%	50V
2457©	5322 126 11583	10nF	10%	63V
2458©	5322 126 11583	10nF	10%	63V
2459©	3198 017 41050	1µF	20%	10V
2460©	2238 586 59812	100nF	10%	50V
2461©	4822 124 81059	220µF	20%	4V
2462©	3198 017 41050	1µF	20%	10V
2463©	3198 017 41050	1µF	20%	10V
2464©	2238 586 59812	100nF	10%	50V
2465©	2238 586 59812	100nF	10%	50V
2466©	2238 586 59812	100nF	10%	50V
2467©	3198 017 41050	1µF	20%	10V
2468©	3198 017 41050	1µF	20%	10V
2469©	2238 586 59812	100nF	10%	50V
2470©	2238 586 59812	100nF	10%	50V
2471©	2238 586 59812	100nF	10%	50V

RESISTORS

3449©	4822 051 30101	100Ω	5%	0,06W
3450©	4822 117 12971	15Ω	5%	0,06W
3451©	4822 117 12971	15Ω	5%	0,06W
3452©	4822 051 30101	100Ω	5%	0,06W
3453©	4822 051 30109	10Ω	5%	0,06W
3454©	4822 117 12971	15Ω	5%	0,06W
3455©	4822 051 30102	1kΩ	5%	0,06W
3456©	4822 051 30102	1kΩ	5%	0,06W
3457©	5322 117 13051	680Ω	1%	0,06W
3458©	5322 117 13061	180Ω	1%	0,06W
3459©	4822 051 30221	220Ω	5%	0,06W
3460©	4822 051 30102	1kΩ	5%	0,06W
3461©	4822 051 30479	47Ω	5%	0,06W
3462©	4822 051 30101	100Ω	5%	0,06W
3463©	4822 051 30101	100Ω	5%	0,06W
3464©	4822 051 30103	10kΩ	5%	0,06W
3465©	4822 051 30101	100Ω	5%	0,06W
3466©	4822 051 30471	470Ω	5%	0,06W
3467©	4822 051 30103	10kΩ	5%	0,06W
3468©	4822 051 30103	10kΩ	5%	0,06W
3469©	4822 051 30101	100Ω	5%	0,06W
3470©	4822 117 12971	15Ω	5%	0,06W
3471©	4822 051 30339	33Ω	5%	0,06W
3472©	4822 051 30154	150kΩ	5%	0,06W
3473©	4822 117 13632	100kΩ	1%	0,06W
3474©	4822 117 12971	15Ω	5%	0,06W
3475©	4822 051 30101	100Ω	5%	0,06W
3476©	4822 051 30101	100Ω	5%	0,06W
3477©	4822 051 30471	470Ω	5%	0,06W
3478©	4822 051 30471	470Ω	5%	0,06W
3479©	4822 051 30471	470Ω	5%	0,06W
3480©	4822 051 30101	100Ω	5%	0,06W
3481©	4822 051 30101	100Ω	5%	0,06W
3482©	4822 051 30471	470Ω	5%	0,06W
3483©	4822 051 30101	100Ω	5%	0,06W

RESISTORS

3484©	4822 117 12971	15Ω	5%	0,06W
3486©	4822 051 30101	100Ω	5%	0,06W
3488©	4822 117 13632	100kΩ	1%	0,06W
3489©	4822 051 30103	10kΩ	5%	0,06W
3490©	4822 051 30101	100Ω	5%	0,06W
3491©	4822 051 30479	47Ω	5%	0,06W
3492©	4822 051 30105	1MΩ	5%	0,06W
3493©	4822 051 30103	10kΩ	5%	0,06W
3494©	4822 051 30103	10kΩ	5%	0,06W
3495©	4822 051 30103	10kΩ	5%	0,06W
3497©	4822 051 30103	10kΩ	5%	0,06W
3498©	4822 051 30332	3,3kΩ	5%	0,06W
3499©	4822 051 30103	10kΩ	5%	0,06W
4450©	4822 051 30008	CHIP JUMPER 0603		

COILS

1460	4822 242 10989	CER.RES. 16,9MHz
5450©	4822 157 11074	100µH

DIODES

6450©	4822 130 11411	BZX284-C3V3
6451©	4822 130 11366	BZX284-C3V9
7454	4822 130 34174	BZX79-B4V7

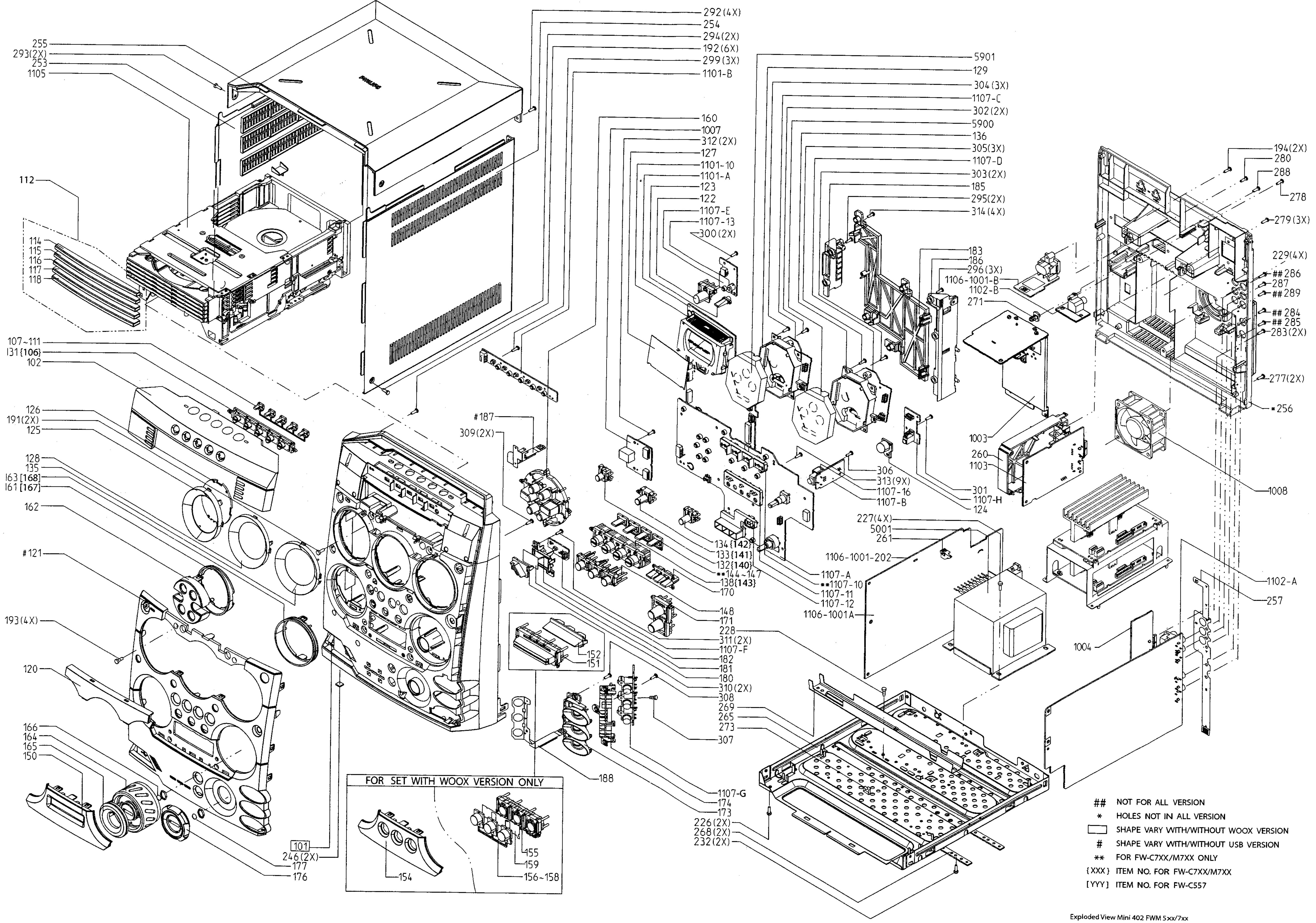
TRANSISTORS

7452©	3198 010 42310	BC847BW
7453©	3198 010 42310	BC847BW
7456©	3198 010 42310	BC847BW
7460©	3198 010 42310	BC847BW

INTEGRATED CIRCUITS

7451©	not available	please order complete MP3 Board
7455©	4822 209 17108	LM317LD Voltage Regulator
7457©	9352 456 50115	HC1G04, Inverter
7458©	9322 130 41668	M24C64, EEPROM
	3103 308 67020	**MP3 Board**

SET MECHANICAL EXPLODED VIEW


255
293(2X)
253
1105
112
114
115
116
117
118
107~111
131{106}
102
126
191(2X)
125
128
135
163[168]
161[167]
162
#121
193(4X)
120
166
164
165
150
101
246(2X)
177
176
292(4X)
254
294(2X)
192(6X)
299(3X)
1101-B
160
1007
312(2X)
127
1101-10
1101-A
123
122
1107-E
1107-13
300(2X)
#187
309(2X)
134{142}
133{141}
132{140}
**144~147
138{143}
170
148
171
228
311(2X)
1107-F
182
181
180
310(2X)
308
269
265
273
307
152
151
188
1107-G
174
173
226(2X)
268(2X)
232(2X)
FOR SET WITH WOOX VERSION ONLY
154
155
159
156~158
5901
129
304(3X)
1107-C
302(2X)
5900
136
305(3X)
1107-D
303(2X)
185
295(2X)
314(4X)
183
186
296(3X)
1106-1001-B
1102-B
271
306
313(9X)
1107-16
1107-B
301
1107-H
124
1107-A
**1107-10
1107-11
1107-12
1106-1001A
227(4X)
5001
261
1106-1001-202
1003
260
1103
1004
194(2X)
280
288
278
279(3X)
229(4X)
## 286
287
## 289
## 284
## 285
283(2X)
277(2X)
*256
1008
1102-A
257

##	NOT FOR ALL VERSION
*	HOLES NOT IN ALL VERSION
☐	SHAPE VARY WITH/WITHOUT WOOX VERSION
#	SHAPE VARY WITH/WITHOUT USB VERSION
**	FOR FW-C7XX/M7XX ONLY
{XXX}	ITEM NO. FOR FW-C7XX/M7XX
[YYY]	ITEM NO. FOR FW-C557

ECHANICAL & ACCESSORIES PARTS LIST - MAIN UNIT

112	3140 117 72141	Cover Tray Pre-Assy
0114	3140 117 70191	Cover Tray 5DTC 1
0115	3140 117 70201	Cover Tray 5DTC 2
0116	3140 117 70211	Cover Tray 5DTC 3
0117	3140 117 70221	Cover Tray 5DTC 4
0118	3140 117 70231	Cover Tray 5DTC 5
120	3140 117 70241	Panel Front Display
129	3139 114 78261	Bracket VU Meter 1(L)
136	3139 114 78271	Bracket VU Meter 2(R)
174	3139 114 78191	Bracket Game Port
176	3139 118 19931	Knob Game Sound Control
177	4822 492 51374	Ring
183	3139 114 78301	Bracket PCB Front Display
201	3140 117 70291	Cab Front Pre-Assy
0101	3140 117 70322	Cabinet Front
0102	3140 117 70331	Panel Front 5DTC
0107	3139 117 77741	Lightguide 5DTC Play 1
0108	3139 114 77751	Lightguide 5DTC Play 2
0109	3139 114 77761	Lightguide 5DTC Play 3
0110	3139 114 77771	Lightguide 5DTC Play 4
0111	3139 114 77781	Lightguide 5DTC Play 5
0121	3140 117 70352	Panel Frt Ctrl USB /21/30
0121	3140 117 71592	Panel Frt Control USB /22
0122	3140 117 70371	But ECO/Stdby Power
0123	3139 114 77901	Lightguide Power ECO
0124	3140 114 62251	Lightguide IR
0128	3139 118 19771	Cover Ring VU Meter 1(L)
0131	3140 114 62261	Button Set 5DTC Play
0132	3140 114 62281	Button DIM
0133	3140 114 62291	Button PROG
0134	3140 114 62301	Button CLOCK
0135	3139 118 19781	Cover Ring VU Meter 2(R)
0138	3140 114 62311	Butt Set Source Select
0148	3140 117 70391	Butt Set DBB/DSC/VAC
0150	3140 117 70401	Cover Orn MAX
0151	3139 114 78071	Button MAX
0160	3139 118 19841	Button Set Func Control
0161	3139 118 19861	Cover Ring Func Ctrl Foil
0162	3140 117 71181	Cap Func Control
0163	3139 118 19891	Cover Ring Volume Foil
0170	3139 114 78161	Lightguide Game Sound
0171	3140 117 70461	Butt MIX-IT/Game Mode
0173	3139 114 78201	Cover Game Port
0182	3139 114 78381	Holder Led USB
0185	3139 114 72756	Bracket CDC Left
0186	3139 114 72765	Bracket CDC Right
0246	3139 113 27141	Foot Rubber 4mm
0202	3140 117 70491	Panel Rear Pre-Assy
0255	3139 114 78341	Cover Top
0256	3139 114 78231	Panel Rear
0203	3140 117 70531	Windows Pre-Assy
0125	3139 118 19761	Cover Ring FTD
0126	3139 118 19792	Window Display FTD
0204	3140 117 70511	Volume Knob Pre-Assy
0164	3140 114 62331	Knob Volume Rotary
0165	3139 118 19881	Cap Knob Volume
0166	4822 492 51374	Ring
0253	3139 114 79081	Panel Left
0254	3139 114 79101	Panel Right
0271	3139 114 71010	Stopper Heatsink
0345	3140 118 51731	Box Speaker Assy
0351	4822 303 50063	FM Aerial
0352	4822 303 50082	Antenna AM Loop
0353	3139 238 06141	Remote Control
0356	2422 070 98151 ⚠	Mains Cord /21/22
0356	2422 070 98248 ⚠	Mains Cord /30
0357	3139 128 73010 ⚠	Adaptor Plug /21
0358	2422 076 00208	Cable Cinch/1M7/Cinch
0364	3140 110 22491	Cable USB 3M M589
0369	3140 118 72181	CD-ROM USB PC LINK Installer SW
1007	3103 308 67741	PBAS USB Sound Agent
1008	2822 031 01494	Fan 12VDC 0,8W 3100RPM
5001	3139 118 32891 ⚠	Mains Transformer /21
5001	3139 118 32841 ⚠	Mains Transformer /22/30
5900	3139 110 53451	Meter VU
5901	3139 110 53451	Meter VU
8201	3139 110 33701	FFC Foil 07P/220/07P AD
8203	3140 110 22501	FFC Foil 08P/280/08P AD
8404	3139 111 02511	FFC Foil 08P/300/08P AD Fold
8405	3139 110 35281	FFC Foil 10P/120/10P AD
8407	3139 110 34921	FFC Foil 08P/280/08P BD
8408	3139 111 02491	FFC Foil 19P/280/19P AD
8410	3139 111 02501	FFC Foil 05P/180/05P AD Fold
8412	3139 110 35031	FFC Foil 08P/140/08P AD
8413	3139 110 35401	FFC Foil 09P/340/09P AD
8415	3139 110 34601	FFC Foil 07P/280/07P AD
8417	3139 110 36151	FFC Foil 15P/280/15P AD
8501	3139 110 33941	FFC Foil 04P/180/04P BD
8601	3139 111 02481	FFC Foil 08P/180/08P AD

L/R LOUDSPEAKER BOX BREAKDOWN

3140 079 00121	Kendo Mask
9965 000 03233	Grommet (Dia. 11 mm)
3141 079 00191	Woofer 6,5" 8R 200W
9965 000 18386	Woofer Ring
9965 000 18391	Tweeter 2" 6R
9965 000 18388	Tweeter Ring
9965 000 18389	Rubber Foot (20 x 11 x 3 mm)

Note : Only the parts mentioned in this list are normal service spare parts.

SCREW LISTS - MAIN UNIT

191	D3 x 12
192	D2 x 6
193	D3 x 12
194	D3 x 12
226	M3 x 6
227	M3 x 10
228	M3 x 6
229	D3 x 12
232	M3 x 6
276	M3 x 6
277	M3 x 10
278	D3 x 16
279	D3 x 12
280	D3 x 12
283	D3 x 12
287	D3 x 12
288	D3 x 12
292	M3 x 12
293	M3 x 12
294	M3 x 6
295	D3 x 12
296	D3 x 12
299	D2 x 8
300	D3 x 12
301	D3 x 12
302	D3 x 10
303	D3 x 10
304	D3 x 12
305	D3 x 12
306	D3 x 12
307	D3 x 12
308	D3 x 12
309	D2 x 8
310	D3 x 10
311	D2 x 8
312	D3 x 12
313	D3 x 12
314	D3 x 12

REVISION LIST

Version 1.0 (3140 785 32830)
* Initial Release FWM589/21/22/30

Version 1.1 (3140 785 32831)

* Page 8-2	: Power 303 Module (UCD 200-250W) - Update - a Jumper Wiring in Section C2 added - the track between pos.6717 and pos.6707 cut